The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 137, No. 10 — CHICAGO, ILLINOIS — July 3, 1948

COPYRIGHT, 1948, BY AMERICAN MEDICAL ASSOCIATION

FOLIC ACID THERAPY

Its Effect as Observed in Two Patients with Pernicious Anemia and Neurologic Symptoms

SAMUEL D. JACOBSON, M.D.
LAWRENCE BERMAN, M.D.
ARNOLD R. AXELROD, M.D.
and
ELMORE C. VONDER HEIDE, M.D.
Detroit

The antianemic properties of folic acid have been demonstrated repeatedly,[1] and this work has been summarized by Berry and Spies.[2] It has also been emphasized that folic acid is effective in those patients with macrocytic anemia who also exhibit megaloblastic erythropoiesis in the bone marrow.[3] It is still not known, however, whether folic acid therapy is able to produce and maintain in patients with addisonian pernicious anemia complete hematologic and clinical remission, nor are the optimum dosage of folic acid and the preferable method of administration definitely established.

In the course of an investigation of the therapeutic role of folic acid, the details of which will be reported at a later date, 2 patients with addisonian pernicious anemia were encountered whose clinical course while they were receiving folic acid was characterized by a symptomatic relapse. The histories of these patients are reported now because of their clinical interest.

REPORT OF CASES

CASE 1.—H. W., a 78 year old white woman, was well until eight months before admission, at which time she began to notice gradually increasing malaise, anorexia, generalized weakness and exertional dyspnea. She also noticed numbness and tingling of the toes and the fingers. These symptoms continued until ten weeks before admission, when she had an infection of the upper respiratory tract, for which her physician prescribed symptomatic therapy. Following the acute infection, the symptoms of malaise and weakness became so severe that she was confined to bed. The numbness and tingling of the fingers and the toes increased. Four weeks before being admitted to the hospital she lost all desire for food. The rest of the past history was not contributory.

Examination revealed an obese, elderly, white female who appeared apathetic. The skin was pale, and the scleras were icteric. The ocular fundi exhibited moderate arteriosclerosis. The mucous membranes of the mouth were pale. The edges of the tongue were smooth. The lungs were clear. The heart was slightly enlarged to the left. A blowing systolic murmur was heard over the entire precordium. The blood pressure was 90 systolic and 50 diastolic. The liver, the kidneys and the spleen could not be palpated. Knee and ankle reflexes were absent bilaterally. Vibratory sensation was absent over both lower extremities to the level of the iliac crests. Sense of motion and sense of position were intact.

Roentgenologic examination of the chest and of the upper gastrointestinal tract revealed nothing significant.

The serologic tests were negative. The urine was normal. Chemical analysis revealed the blood urea to be 68 mg. per hundred cubic centimeters. No free hydrochloric acid was demonstrated in the gastric juice after histamine stimulation.

The initial examination of the peripheral blood revealed 3.3 Gm. of hemoglobin per hundred cubic centimeters. The red cell count was 980,000 per cubic millimeter. The red cells showed anisocytosis, poikilocytosis and polychromasia. The white cell count was 6,200, with a differential count of 16 per cent polymorphonuclear cells, 33 per cent band forms, 38 per cent lymphocytes, 10 per cent monocytes, 3 per cent eosinophils and 1.8 per cent reticulocytes. The platelets numbered 33,000. The mean cell diameter was 7.7 microns. The mean corpuscular volume was 138 cubic microns; the mean corpuscular hemoglobin was 34 micrograms; the mean corpuscular hemoglobin concentration was 25 per cent. Examination of material obtained by sternal aspiration revealed hyperplastic megaloblastic marrow.

A diagnosis of addisonian pernicious anemia in relapse was made.

The patient was given a hospital ward diet containing approximately 300 Gm. of carbohydrate, 65 Gm. of protein and 70 Gm. of fat. In addition she was given 25 mg. of synthetic folic acid by intramuscular injection daily for eleven consecutive days. A total of 275 mg. was thus given. The hematologic response is summarized in chart 1. An increase in reticulocyte count was noted on the fifth day of therapy. A maximum reticulocyte response of 57.5 per cent was observed on the ninth day. The hemoglobin concentration and the red blood cell count also began to increase.

The dose was then changed to 65 mg., taken orally daily, and this dosage was continued for the next thirty days. The patient's appetite and clinical appearance improved. By the fifteenth day of therapy she was mentally alert and cheerful. As is indicated, the hemoglobin concentration and the red blood cell count continued to improve. The numbness and tingling of the fingers and the toes disappeared. The aspiration of sternal marrow was repeated on the fifteenth day, and examination revealed marked hyperplasia, with the previously megaloblastic erythropoiesis reverting to normoblastic erythropoiesis.

The dose of folic acid was changed to 195 mg., taken orally twice weekly for three and one-half weeks. When the patient

---

The synthetic folic acid was supplied by the Lederle Laboratories, Inc., New York.

From the Departments of Medicine and Pathology, Wayne University College of Medicine and City of Detroit Receiving Hospital, and the Anemia Laboratory, Outpatient Department, Harper Hospital.

1. (*a*) Moore, C. V.; Bierbaum, O. S.; Welch, A. C., and Wright, I. D.: The Activity of Synthetic Lactobacillus Casei Factor as an Antipernicious Anemia Substance, J. Lab. & Clin. Med. **30**: 1056-1069, 1945. (*b*) Spies, T. D.; Vilter, C. F.; Koch, M. B., and Caldwell, M. H.: Observations on the Antianemic Properties of Synthetic Folic Acid, South. M. J. **38**: 707-709, 1945. (*c*) Doan, C. A.; Wilson, H. E., and Wright, C. S.: Folic Acid, an Essential Pan-Hematopoietic Factor: Experimental and Clinical Studies, Ohio State M. J. **42**: 139-144, 1946. (*d*) Spies, T. D.: Effect of Folic Acid on Persons with Macrocytic Anemia in Relapse, J. A. M. A. **130**: 474-477 (Feb. 23) 1946. (*e*) Amill, L. A., and Wright, M.: Synthetic Folic Acid Therapy in Pernicious Anemia, ibid. **131**: 1201-1207 (Aug. 10) 1946.

2. Berry, J. L., and Spies, T. D.: The Present Status of Folic Acid, Blood **1**: 271-306, 1946.

3. Berman, L.; Jacobson, S. D., and Vonder Heide, E. C.: Observations on Response of Macrocytic Anemias to Folic Acid Therapy, Am. J. Clin. Path. **16**: 550-563, 1946.

was discharged from the hospital, her hemoglobin was 10.9 Gm.; the red cell count was 3,950,000; the white cell count was 6,500; the platelet count was 120,000, and the mean cell diameter was 7.3 microns.

The patient was discharged to the outpatient clinic on a daily oral dose of 10 mg. of synthetic folic acid. At weekly intervals she reported for clinical evaluation. She remained symptomatically well, and her red cell count averaged about 4,000,000 for approximately two months after her discharge. At this time she began to complain again of numbness and tingling of the fingers and the toes. Her appetite and sense of well-being at this time were good. The dose of folic acid was increased to 25 mg., taken orally for one week. The numbness and tingling became worse. The daily oral dose was then increased to 50 mg. for another week. Despite the increased dose, her neurologic complaints were again more disturbing, and she again became irritable and mentally confused, although the objective neurologic findings remained essentially unchanged. The hemoglobin at this time was 9.75 Gm., and the red cell count was 3,820,000. It was thought advisable to change the therapy by substituting liver extract of known potency, and she received 20 units intramuscularly three times weekly.

CASE 2.—H. P., a white man aged 62, was admitted to the hospital after complaining of progressive weakness for one year. In addition he had experienced exertional dyspnea, numbness and tingling of his toes, and anorexia. The weakness and the exertional dyspnea had become so severe that he was confined to bed several weeks before admission. He said that there had not been nausea or vomiting. A review by systems showed nothing contributory.

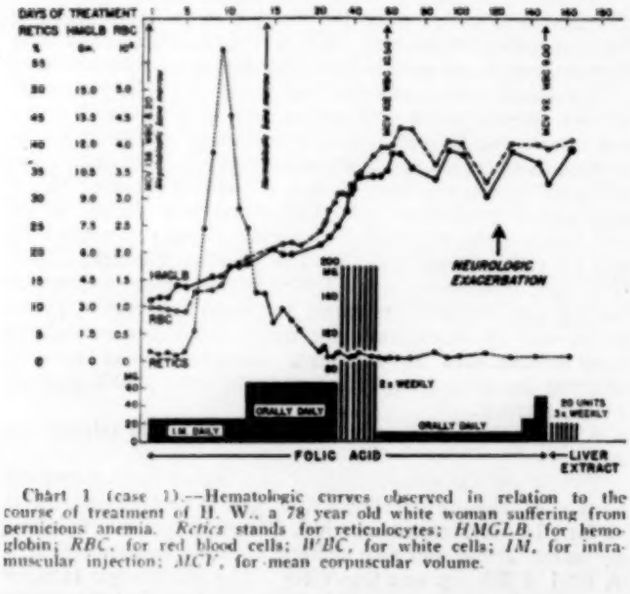

Chart 1 (case 1).—Hematologic curves observed in relation to the course of treatment of H. W., a 78 year old white woman suffering from pernicious anemia. *Retics* stands for reticulocytes; *HMGLB*, for hemoglobin; *RBC*, for red blood cells; *WBC*, for white cells; *IM*, for intramuscular injection; *MCV*, for mean corpuscular volume.

On examination the patient appeared drowsy, somewhat confused and irrational. The skin was icteric, as were the scleras. The mucous membranes were pale. The tongue was smooth and pale. A firm, tender liver edge was palpated 3 fingerbreadths below the right costal margin. The spleen was not palpable. Weakness of the extremities was noted. There was a loss of vibratory sense in the lower extremities. The sense of motion and that of position were intact. There was a positive Babinski response. The reflexes were generally hyperactive.

The initial examination of peripheral blood (after a transfusion of 200 cc. of whole blood) revealed a red cell count of 730,000 cells per cubic millimeter; the hemoglobin content was 2.7 Gm. per hundred cubic centimeters of blood; the reticulocyte count was 1.7 per cent; the white cell count was 5,800; the differential count was myelocytes 1 per cent, metamyelocytes 1 per cent, band forms 36 per cent, polymorphonuclear cells 44 per cent, lymphocytes 19 per cent and occasional monocytes. The platelets numbered 16,000. The mean cell diameter was 7.95 microns; the mean corpuscular volume was 122 cubic microns; the mean corpuscular hemoglobin was 34 micrograms; the mean corpuscular hemoglobin concentration was 31 per cent. The initial examination of marrow revealed megaloblastic erythropoiesis.

Chemical examination of the blood showed the urea to be 68 mg. per hundred cubic centimeters. The serum albumin was 2.7 Gm. and the serum globulin 4.0 Gm. per hundred cubic centimeters. Serologic tests were negative. The urine was normal. Gastric analysis showed achlorhydria after injection of histamine. The stool showed no occult blood. Roentgenograms of the upper gastrointestinal tract revealed no abnormality.

A diagnosis of addisonian pernicious anemia in relapse was made.

Because of his critical condition the patient was given a transfusion of 200 cc. of whole blood. Two days after admission he had a chill followed by fever. Signs of bronchopneumonia were elicited clinically and confirmed by roentgenogram of the chest. He was given penicillin by intramuscular injection, and after nine days his pulmonary signs cleared and he became afebrile.

Two days after his admission a course of daily intramuscular injections of synthetic folic acid was started. After four days the dose was decreased to 20 mg. The dosage was revised after nine days, 20 mg. being injected intramuscularly three times a week, and this dosage was maintained until the patient was discharged from the hospital, at which time his dose was changed to 10 mg., taken by mouth daily. An increase of the reticulocyte count was noted on the fourth day of folic acid therapy. A maximum reticulocyte response of 45.1 per cent was observed on the seventh day. Within two weeks after therapy was instituted the patient was mentally alert, rational and able to be up and around the ward. At this time neurologic examination revealed that vibratory sense was not present in the knees and the left ankle but present, although diminished, in the right ankle.

The sense of motion and that of position were intact. The reflexes were not as active as initially. At the time of his discharge the red cell count was 3,540,000; the hemoglobin content was 8.26 Gm.; the white cell count was 4,100. The mean corpuscular volume was 88 cubic microns, and the mean cell diameter was 7.5 microns.

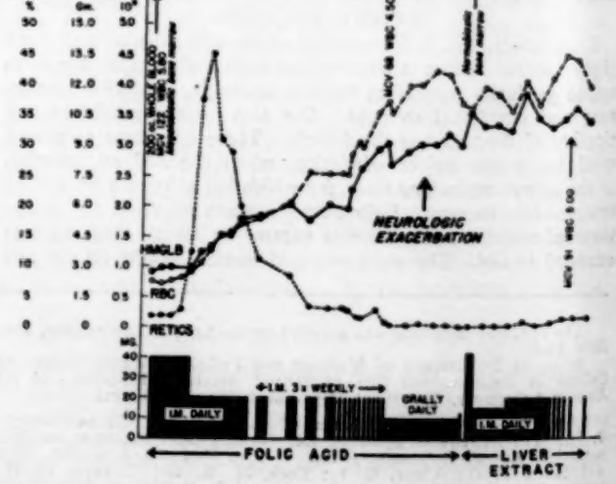

Chart 2 (case 2).—Hematologic curves observed in relation to the course of treatment of H. P., a white man aged 62, suffering from pernicious anemia. (See chart 1 for an explanation of the abbreviations.)

The patient was discharged to the outpatient clinic, taking 10 mg. of folic acid daily by mouth. He remained symptomatically well, and his red cell count remained close to 4,000,000 per cubic millimeter for approximately two weeks. At this time he again noted increasing difficulty in walking, progressing to a point where he required considerable support. He became unable to button his clothes, and there was a recurrence of numbness and tingling of the fingers and the toes. These symp-

toms became so severe that he required hospitalization five weeks after having been discharged.

On readmission the patient was found to be well oriented. There were fine rales at the base of the right lung. The patellar reflexes were hyperactive. The ankle reflexes were absent. The reflexes of the upper extremities were slightly hyperactive. Vibratory sensation was absent in the lower extremities. There was ataxia of both arms and legs. Despite the exacerbation of neurologic findings, the peripheral blood showed no hematologic relapse. The red cell count was 3,630,000; the hemoglobin content was 10.7 Gm.; the reticulocyte count was 0.2 per cent; the white cell count was 3,800. The mean corpuscular volume was 89 cubic microns, and the mean cell diameter was 7.3 microns. Examination of the marrow at this time revealed a hyperplastic marrow, with the previously megaloblastic erythropoiesis reverting to normoblastic erythropoiesis. However, the presence of pathologic neutrophils pointed to an incomplete hematologic remission.

Because of the severity of the neurologic signs and symptoms, liver therapy was started immediately. Fifteen U.S.P. units of potent liver extract was given by intramuscular injection daily for three weeks. The dosage was then changed to 20 units three times per week until discharge. Two weeks after this therapy was begun muscle coordination began to improve so that he was able to walk, although with difficulty. He also noticed greater agility of his fingers, and he was again able to button his clothes. The numbness and tingling began to decrease. His appetite increased impressively, and he gained 11 pounds (5 Kg.) in weight. At the time of his second discharge neurologic examination revealed that the patellar reflex and the reflexes of the upper extremities were slightly hyperactive. The ankle reflexes were diminished. There was no Babinski response. Vibratory sense was present but diminished at both wrists. Motion sense and position sense were present but uncertain. At discharge his red cell count was 4,400,000; the hemoglobin content was 10.4 Gm.; the white cell count was 5,000, and the platelets numbered 230,000. The mean corpuscular volume was 91 cubic microns, and the mean cell diameter was 7.3 microns.

COMMENT

In both cases an initial satisfactory hematologic response to folic acid occurred in that both patients exhibited maximum reticulocytosis as compared with the standards for maximum reticulocyte response to adequate liver therapy. In addition the hemoglobin concentration and the red cell count rose progressively in both patients, and the bone marrow reverted to a normal pattern. However, after four months of therapy in case 1 and after two months of therapy in case 2 the peripheral blood values had still not reached their optimal levels in spite of the fact that the doses used were well above those required to produce the maximal reticulocytosis.[4]

In both cases there was an initial clinical improvement, manifested by increase of appetite, general strength and mental alertness, and the numbness and tingling of the fingers and the toes disappeared. However, after four months of therapy in case 1, and while the hematologic picture was still improving in case 2, there was a reappearance of numbness and tingling and mental confusion, and in case 2, a marked increase of difficulty in locomotion.

Several possibilities must be considered to explain the exacerbation of the neurologic symptoms. The factor of nutritional deficiency, particularly deficiency of the vitamin B complex, does not appear to be important here, because both patients had good appetites while the clinical relapses were developing, and as far as can be determined by questioning, both ate an adequate amount of foods containing the components of the vitamin B complex. This factor is further minimized by the observation that there is a lack of demonstrable therapeutic response on the part of all of the neurologic symptoms of pernicious anemia after the administration of the common components of the vitamin B complex.[5]

There is a question also as to whether these patients were treated with adequate doses of folic acid. In our experience a reticulocyte crisis and an increase of the number of red cells and of the hemoglobin concentration can be produced by a daily oral dose of 5 mg. in cases of pernicious anemia.[3] Doan, Wilson and Wright [1c] accomplished the same results with 1 mg. daily. In our cases the doses administered were in excess of those required to initiate a clinical and hematologic remission. Even if we assume that an adequate dose of folic acid can produce a complete hematologic remission in pernicious anemia, and this point is by no means certain, it does not follow that the same dose will ward off neurologic relapse. Certainly, in the 2 cases reported, 10 mg. daily was not able to prevent such a relapse. It may be that, as with liver extract, folic acid must be administered in amounts in excess of that which is necessary to produce hematologic remission to insure neurologic remission as well.

Unfortunately, the clinical deterioration of our patients was such as to preclude further trial of folic acid. It will be important to see whether large doses of folic acid given each for many months will be more effective in preventing neurologic relapse.

SUMMARY

Two cases in which addisonian pernicious anemia was treated with synthetic folic acid are presented.

Although an initial satisfactory clinical response was obtained during treatment, neurologic exacerbations developed.

Daily doses of 10 to 50 mg. of synthetic folic acid were not adequate for maintaining hematologic improvement after the patients' blood had reached a level of over 4,000,000 red cells per cubic millimeter, nor was this dose adequate for the prevention of neurologic exacerbations.

It is suggested that a daily dose of 50 mg. or more of synthetic folic acid be given a thorough clinical trial for both treatment and maintenance of patients with pernicious anemia in order that the question whether folic acid is useful in the prevention of neurologic exacerbations may be answered.

4. Moore and others.[1a] Spies and others.[1b] Doan and others.[1c] Spies.[3d] Amill and Wright.[1e] Berman and others.[3]

5. Rundles, W. B.: Prognosis in the Neurologic Manifestations of Pernicious Anemia, Blood **1**: 209-219, 1946.

Blunder in Pelvic Mensuration.—Although the principles of clinical measurement of the pelvis were established by William Smellie in 1754, the subsequent introduction by other practitioners of certain fallacious assumptions postponed any correct acquaintance with that discipline for a hundred years and, even after that, many of the more deeply rooted errors continued to persist. The evidence seems clear, indeed, that there is no phase of obstetrics which has been so fraught with blunder, oversight and floundering as has pelvic mensuration; and in view of the present status of the subject—diverse notions as to what constitutes disproportion, conflicting opinions about the value of x-ray mensuration, and so forth—it would appear that this old legacy of error is still with us.—Eastman, Nicholson J., *Obstetrical and Gynecological Survey*, June 1948.

RADICAL ORCHIECTOMY FOR TUMORS OF THE TESTIS

LLOYD G. LEWIS, M. D.
Washington, D. C.

The varied cellular structure of testicular tumors suggests that no single method of treatment is universally applicable. Simple orchiectomy can cure in but a small percentage of cases because of the frequency of early metastasis. The combined therapy of simple orchiectomy and radiation therapy, which is employed by the members of the profession throughout the country, using the standard 250,000 volt roentgen equipment, has proved adequate only for seminoma. Radical orchiectomy, as described by Chevassu,[1] was abandoned by Young, and limited to teratomas by Hinman[2] because of the relative frequency with which inoperable metastasis was found in their patients. I shall try to show that a clinical-pathologic classification of testicular tumors indicates that surgical treatment should be extended and radiation therapy rationalized.

DIAGNOSIS

The cure of testis tumors depends on control of the retroperitoneal metastatic areas, and the operability depends primarily on early diagnosis. The differential diagnosis of a testicular tumor by means of bimanual palpation, a measure which my associates and I must insist on, is not difficult. Varicocele, hydrocele of the cord, spermatocele and epididymitis can be ruled out readily. Thus, the only difficulty encountered is in differentiating a tumor from thickened walled or calcified hydrocele, gumma and hematocele. About 25 per cent of our patients had been treated for epididymitis or traumatic orchitis. Tapping of the hydrocele is permissible to facilitate palpation. When the diagnosis is in doubt, exploration of the scrotum is indicated. Biopsy of the testis is in our opinion contraindicated. Roentgen examination of the scrotum sometimes affords differentiation of peripheral calcification from the central or scattered calcification of tumor growth.

As soon as the diagnosis of testicular tumor is made, simple orchiectomy should be done without delay. In our opinion inguinal orchiectomy has no advantage over scrotal orchiectomy. Further definitive therapy then depends on the pathologic diagnosis.

Hormone bio-assays are in our opinion only confirmatory evidence of tumor. Since both the chorionic gonadotropins and the follicle-stimulating hormones are reported together, the test has little value. If differentiation is to be made, complicated laboratory tests must be carried out on hypophysectomized animals, and such investigation is not now practicable. Thirty-five per cent of our patients with seminoma had positive reactions to Friedman tests. This incidence is identical to that in the control series for the presence of combined hormones. All the reactions were strongly positive in patients with chorionic tumors. Nevertheless, hormone bio-assays should be done to confirm the pathologic picture.

ROENTGEN THERAPY

Prophylactic as well as definitive roentgen therapy consists of delivering the full lethal tumor dose to the frequently involved metastatic areas. Dr. Milton Friedman[3] of New York carried out tests to determine the radiosensitivity of intact testicular tumors at Walter Reed General Hospital. Although such studies on inoperable and late metastases would not be informative, this study was of value because the results showed that seminoma can be completely destroyed by roentgen rays in a dosage of 600 to 800 roentgens delivered in six to seven days. Thus one sees that the adequate prophylactic dose for the retroperitoneal area is about 1,000 roentgens in divided dosage. This dose can be delivered with the 250,000 volt machine and requires about six weeks of treatment, whereas the same dose, delivered with the 1,000,000 volt machine, requires two weeks. In carcinoma, undifferentiated, the lethal tumor dose is about 2,000 roentgens, while in some adenocarcinomas the dose is about 3,000 roentgens. Chorioepitheliomas and tumors of trophoblastic tissue require a dose of 5,000 to 6,000 roentgens. Since tumors composed of adult teratomatous structures cannot be affected by "safe" dosage, it is obvious that roentgen therapy with the standard 250,000 volt machine is inadequate for both the prophylactic and the definitive treatment of any tumors except seminomas.

The dosage by 250,000 volt therapy is limited by cutaneous reactions. The skin offers no protection from overdosage to the patient when the 1,000,000 volt machine is used. When required, we have used the 5,000 roentgen dose. The patients withstood the impact of this high dosage without serious damage to the skin but the incidence of late gastrointestinal complications confines the use of such high dosage to those cases with known inoperable metastases. Fourteen of our patients treated by dosage in excess of 5,000 roentgens had perforations of the stomach or bowel which occurred from one and one-half to two years following therapy. Six of these patients recovered after difficult and immediate surgical intervention but the remaining 8 died and at autopsy no viable tumor was found. In 3 additional patients paralysis of the lower extremities

Read before the Section on Urology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947.

1. Chevassu, M.: Traitment chirurgical des cancers du testicule, Rev. de Chir. 30:628, 1910.

2. Hinman, F.: Radical Operation for Teratoma Testis, Am. J. Surg. 28:16 (April) 1935.

3. Friedman, M.: Supervoltage Roentgen Therapy at Walter Reed General Hospital, S. Clin. North America 24:1424 (Dec.) 1944.

recently developed as a result of such high dosage.

CLASSIFICATION OF TUMORS

A great deal of difficulty has arisen because no generally accepted pathologic classification of tumors of the testis exists. Tumors of the supporting tissues of the testis, sarcomas and hemangiomas, are rare and were not seen in our series of patients of military age. Two benign interstitial cell tumors found in well masculinized persons were treated. Tumors of germ cell origin—and I think that seminoma can be included in this group—comprise 99.5 per cent of our cases. Although Ewings'[4] theory of the development of these tumors from a totipotent cell deserves serious consideration, it does not indicate that all tumors should be treated alike. Embryonal carcinoma, according to the classification of the Army Institute of Pathology,[5] includes embryonal carcinomas undifferentiated, adenocarcinoma and papillary adenocarcinoma, choriocarcinoma, and chorioepithelioma in a subgroup. The radiosensitivity studies, as shown, indicated that chorionic tumors must be differentiated because of the wide variation in the response to roentgen rays. The term teratocarcinoma does not specify the particular type of maligant cell involved and, therefore, I suggest the following clinical-pathologic classification:

Tumors of Germ Cell Origin

	Number	Percentage
Seminoma	110	44.0
Undifferentiated or adenocarcinoma	28	11.2
Trophocarcinoma from cytotrophoblast	17	6.8
Chorioepithelioma from syncytiotrophoblast	12	4.8
Teratoma with undifferentiated or adenocarcinoma	35	14.0
Teratoma with trophocarcinoma	28	11.2
Teratoma with chorioepithelioma	12	4.8
Teratoma	8	3.2
	250	100

Seminoma is a relatively slowly growing, rounded or lobulated tumor, occurring in any part of the testis and found in the older age group in particular. It is the common tumor of cryptorchids and those patients with atrophic testes. This tumor metastasizes rather late, by way of the lymph channels. It is highly radiosensitive and the prognosis is good. Although seminoma cells are found in association with trophocarcinoma and teratoid tumors, the seminoma may be regarded as a unicellular tumor in most instances. The cells are rather uniform with clear cytoplasm and darkly staining nuclei and grow in sheets or strands, occasionally suggesting an acinar pattern. The remaining testis tubules are compressed rather than invaded. There is a remarkable tendency to spontaneous necrosis, and since these necrotic areas are unaffected by roentgen rays, we were able to make a diagnosis in 6 cases in which the viable tumor was destroyed by radiation. The metastases from seminoma may involve solitary lymph nodes, but this tumor tends to lay down a sheet of metastatic tumor cells over the iliac vessels and the vena cava with the result that resection of the retroperitoneal metastases is frequently impossible. Radical orchiectomy is not definitely indicated in seminoma because of the high radiosensitivity of the tumor and the frequent inoperability of metastases.

Classification of those tumors of definite embryonic cells, undifferentiated or in acinar or papillary pattern without chorionic elements seems necessary. These tumors grow rapidly, metastasize early and invade testis tubules. Undifferentiated carcinoma requires a roentgen dose of 2,000 to 3,000 roentgens. The metastases usually involved one or more lymph nodes in the retroperitoneal area, a situation which makes for operability. We believe that all tumors in need of a roentgen dose of more than 1,000 roentgens, lethal tumor dose, should be treated by surgical resection of the retroperitoneal nodes whenever the preoperative roentgenographic studies have ruled out pulmonary or inoperable metastases.

The Army Institute of Pathology recognizes the frequency of occurrence of chorionic tissues in what they have termed "embryonal carcinoma." Definitely cytotrophoblastic cells, the precursor of the syncytiotrophoblastic cells of choriophithelioma, are readily recognized. They appear in an acinar pattern and in a papillary form as in choriopapillary adenocarcinoma. These tumors grow rapidly and metastasize early. They are, along with chorioepitheliomas, the hemorrhagic tumors of the testes. Any rapidly growing tumor of the testis which suddenly decreases in size is suggestive of choriocarcinoma. These tumors invade blood vessels and metastasize by way of the blood stream as well as by way of the lymphatic system.

Chorioepithelioma is a well recognized tumor which is composed of Langhans cells and syncytium. This tumor is characterized by early metastasis, and many patients present themselves for treatment because of metastatic symptoms. In 4 of our patients there was no palpable testicular tumor, and serial sections were necessary to locate the microscopic primary lesion. This tumor also metastasizes

4. Ewing, J.: Neoplastic Disease: A Treatise on Tumors, ed. 4, Philadelphia, W.B. Saunders Company, 1940, chap. 40.

5. Friedman, N.B.: Atlas of Genitourinary Pathology, Army Institute of Pathology, United States War Department, Surgeon General's Office, 1946.

by way of the blood stream and lymphatics. It is radioresistant and most frequently inoperable.

Teratocarcinoma implies the presence of adult or embryonic structures derived from more than one primitive germ layer, in addition to the carcinomatous element. These tumors are the cystic tumors which may be easily recognized on gross examination. Lethal tumor cells in teratocarcinoma may take the form of seminoma, embryonal carcinoma, chorioepithelioma, or the differentiated tissue itself may become malignant. In view of this variety of possibilities, the type of the malignant cell occurring with teratoid elements should be described in the diagnosis so that definitive treatment can be undertaken. At first we thought that the teratomas should be differentiated into immature and mature types, but since there is so little difference in the end results and since these immature and mature structures are so frequently mixed, there is no point in differentiating them.

In a few instances one finds tumors composed of various adult teratomatous structures without evidence of malignant change. These tumors are relatively slowly growing and are late to metastasize. Radical orchiectomy alone is indicated because of their high radioresistance and delayed but definite tendency to metastasize.

Although tumors of the interstitial cells of Leydig are usually benign, malignancy is noted in a small percentage of cases. The radiosensitivity of these tumors has not been studied. In both of our cases, radical orchiectomy was done because, on gross section, these reddish brown tumors, occupying the entire testis in each case, appeared to be malignant. Frozen section is of no value in differentiating this tumor, and therefore it is wise to wait for the report on permanent sections before radical resection of the retroperitoneal nodes is attempted.

RESECTION

Radical resection of the retroperitoneal nodes and spermatic cord is best done with the patient under spinal anesthesia, using an incision which extends from the tip of the eleventh rib to the external inguinal ring. It is not necessary to continue the incision to the costovertebral angle. When large nodes must be removed around the renal pedicles, extension of the incision medially, in the form of a figure 7, facilitates their removal. After incision of the skin and subcutaneous tissues, the external oblique fascia and muscle are split. The internal oblique and transversalis muscles are sharply divided in order to expose the retroperitoneal space. The internal spermatic vessels are exposed in their sheath between the transversalis fascia and the peritoneum, triply clamped, divided and doubly ligated at their origins on the aorta and the vena cava or renal pedicle. The dissection is carried downward to the point where the vas leaves the vessels. Downward dissection avoids accidental opening of the peritoneum, but if the dissection is carried upward from the scrotum, the peritoneum frequently is opened accidentally at the point where the vas turns to pass down over the posterior surface of the bladder. Occasionally lymph nodes are removed along the spermatic cord. The external inguinal nodes are never involved in a testicular tumor unless the scrotal wall has been invaded. The first involved node is situated at the internal inguinal ring on the anterior surface of the external iliac artery. The lymph vessels then pass along the surface of that vessel to a node lying medial to it, just below the bifurcation of the hypogastric artery. The lymphatics then cross the common iliac artery to an elongated node lying between the common iliac artery and genitofemoral nerve. On the right side the lymphatics pass to nodes on the anterior surface of the vena cava and to nodes which lie between the vena cava and the aorta. The most frequently involved node is located below the entrance of the internal spermatic vein into the vena cava. On the left side the nodes lie laterally to the aorta, and here the most frequently involved node is situated just below the point where the internal spermatic vein drains into the renal vein. Crossed retroperitoneal metastases may occur, but we observed them in selected cases only in instances of extensive metastatic involvement above the renal pedicle. These cases are inoperable. We sacrificed the left kidney in order to remove metastases around the renal pedicle in 2 patients with extremely radioresistant tumors.

One hundred and sixty-nine out of 250 patients were selected for radical retroperitoneal resection. There was no operative mortality and the morbidity was unexpectedly low. Complications occurred in 4 patients. In one patient atelectasis developed which was cleared by bronchoscopic suction, and in another pulmonary embolism developed following accidental opening and suture of the vena cava. We would not hesitate to ligate the vena cava if such an accident should occur again. The third patient had a superficial wound abscess, and in the fourth patient a large, sterile retroperitoneal abscess developed six months after radiation therapy.

Although we have done retroperitoneal resection on a number of patients with seminoma in order to establish the frequency, mode of metastatic involvement and operability of these tumors, we do not recommend this procedure for seminoma. This study enabled us to limit the fields for radiation therapy, thus permitting the delivery of adequate dosage with minimum radiation of the bowel. Radical resection seems indicated for all tumors which require more than 1,000 roentgens lethal tumor dose, and radical resection, as advised by

Hinman, should be carried out on all adult tumors.

COMBINED THERAPY

Prophylactic radiation therapy is definitely indicated in seminoma and undifferentiated carcinoma. The dose for seminoma is about 1,000 roentgens and for undifferentiated carcinoma and adenocarcinoma about 3,000 roentgens. Prophylactic irradiation is contraindicated for those tumors requiring between 5,000 and 6,000 roentgens because of the late, serious complications which follow this large dosage. We would, therefore, reserve radiation therapy of large dosage for those patients who are known to have inoperable metastatic involvement.

It would be unfair to compare our results from radical surgical treatment in the 169 selected cases with those in the remaining series, many of which were inoperable. The results of combined therapy are presented in the accompanying table. Sixty-six per cent of our patients had no retroperitoneal metastatic involvement. In 24 per cent metastatic nodes were removed and in the remaining 10 per cent the metastic nodes were inoperable.

Results of Combined Therapy

	Number	Demonstrated Metas. %	Living 1½ to 5 Yr. %	Died %	Not Followed %
Interstitial cell tumors	2	0	100	0	0
Seminoma	109	23	74	10	16
Undifferentiated and adenocarcinoma	28	60	36	50	14
Trophocarcinoma, Carcinoma Cytotrophoblast	17	70	30	65	5
Chorioepithelioma from syncytiotrophoblast	12	92	0	100	0
Teratoma with undifferentiated adenocarcinoma	34	38	67	24	9
Teratoma with trophocarcinoma	28	75	36	53	11
Teratoma with chorioepithelioma	12	7?	8.3	82.6	0
Teratoma	8	0	100	0	0
	250	43	55	32	13

CONCLUSIONS

1. Simple orchiectomy, either through a scrotal incision or an inguinal incision, with ligation of the cord at the internal inguinal ring, is not sufficient treatment for the cure of testis tumors.

2. Orchiectomy followed by 250,000 volt roentgen therapy is inadequate treatment for any tumor except seminoma.

3. Early diagnosis by means of bimanual palpation or scrotal exploration will increase the rate of cure.

4. Accurate clinical-pathologic diagnosis, after simple orchiectomy, will make possible the proper selection of definitive treatment, irradiation, extended surgical treatment or combined therapy.

5. Simple orchiectomy alone is required for benign tumors.

6. Radical orchiectomy is indicated in apparently benign teratomas because of their high radioresistance and the incidence of late metastases.

7. Simple orchiectomy followed by prophylactic or definitive radiation therapy appears to be sufficient for seminoma. The fact that only 5 of the 25 patients with known metastases have died of the tumor demonstrates the efficacy of roentgen therapy in this particular tumor.

8. Radical resection of the retroperitoneal nodes is definitely indicated for all malignant testicular tumors which require more than 1,000 roentgens lethal tumor dose; i.e., for all malignant tumors except seminomas.

ABSTRACT OF DISCUSSION

DR. HAROLD P. McDONALD, Atlanta, Ga.: The unusual opportunity afforded Dr. Lewis of seeing and treating so large a number of tumors of the testicle at the Walter Reed Hospital during the recent war should be of great value to urology. His experience has caused him to reclassify tumors of the testis on the basis of sensitivity of the tumor to roentgen radiation. This would put seminomas in one group and embryonal carcinomas, choriocarcinomas, chorioepitheliomas and some teratomas in another group. This latter group is made up of cells resistant to roentgen radiation and is hopeless unless radical resection of all metastatic retroperitoneal lymph nodes can be done. The seminoma group, responding to roentgen therapy, is treated by radiation and simple orchiectomy For roentgen therapy to be effective the inguinal, abdominal and lower thoracic regions must each receive adequate dosage of roentgen rays. This must be given during the first series of treatments, as it has been shown that when later nodes appear the roentgen therapy is not as effective as formerly. Since the seminoma group comprises almost half the testicular tumors this is of great importance. We have not subjected any patients to the radical resection of lymph nodes Our patients with embryonal carcinoma or choriocarcinoma or epithelioma have all died within two to three years. Simple orchiectomy and roentgen therapy have been combined. Patients who have lived beyond a five year period have been those with teratoma or seminoma. This experience bears out the findings expressed here today. The report of Lowry, Beard, Hewitt and Barner of 100 cases of testicular tumors seen in an army general hospital indicated better results from simple orchiectomy and roentgen therapy than those obtained by Lewis or ourselves. The last word has not yet been said about the

therapy of testicular tumors. Although it is a formidable procedure, it would seem rational to remove all retroperitoneal nodes along with the tumor in selected cases, and whenever possible. The 8 or 10 per cent increase possible in five year cures justifies this radical procedure. More careful pathologic diagnosis as well as classification of testicular tumors must be done in order properly to differentiate between those who should have the radical procedure done and those in whom roentgen therapy can be utilized with hope of cure.

DR. JOHN ORMOND, Detroit: I would like to find out whether I should adopt the radical operation. I should have to be thoroughly convinced that the results would be better than those which my associates and I have been obtaining. In our 40 cases which I have reviewed recently, every patient in whom there were no demonstrable metastases who was treated by simple orchiectomy followed by roentgen radiation is alive today. It is too early to tell about some of these patients; the time since operation is too short. Our series includes 3 patients with so-called chorioepithelioma, 2 of whom are living, 1 for about three years. The important thing to know is whether this operation is of use when there are demonstrable metastases. As to metastases, we took occasion to divide our patients arbitrarily into two groups, two age groups, taking age 30 as our arbitrary division point. Four fifths of those under 30 are dead, and the majority of those over 30 are still living. The interval between the onset or at least the apparent onset of the disease and the time that they consulted a physician was just half as long for the younger patients as it was for the older patients; yet the incidence of metastases in the younger patients was far greater than in the older patients. The profession and the laity have to be educated to the fact that any enlargement of the testis should be seen by a skilled man just as soon as it is discovered, and every case of hydrocele in the adult scrutinized carefully. The importance of this is evidenced by the following case: Two years ago, I removed a hydrocele on a man and, unfortunately, some bleeding occurred in the hematoma formation. We were following it rather closely. He came back this year and his testicular mass did not seem any larger than it was before, but as we lifted it up, it seemed just a little heavier. So with a good deal of trouble we persuaded the man to allow us to explore, and we found a malignant tumor and excised it, and I am sure we saved his life.

DR. LLOYD G. LEWIS, Washington, D.C.: Our statistics show that the results of radical orchiectomy for seminoma are little better than those of simple orchiectomy. We have not been able to cure any cases of chorioepithelioma. There are, however, in this series, 12 patients who had chorionic tumor of the cytotrophoblastic cells who had retroperitoneal glands removed, and these patients are living two years following surgical treatment. These are radioresistant tumors. I am glad that Dr. Ormond brought up the question of disproportionate weight of testicular tumors. That is an important sign. In the diagnosis of testicular tumor, we must insist on gentle bimanual palpation. The advantages of a million volt roentgen therapy machine lie in the fact that one can deliver the lethal tumor dose more rapidly than with the lower voltage machine. The lethal tumor dose for seminoma (1,000 roentgens) can be delivered to the retroperitoneal area in two weeks with the million volt machine, whereas it takes six weeks with the 250,000 volt machine. When radiation has to be prolonged, estimation of depth dosage cannot be accurately determined.

TOOTH DECAY IN RELATION TO DIET AND GENERAL HEALTH

NILS P. LARSEN, M. D.
Honolulu, Hawaii

Hawaii with its groups of people of many different racial backgrounds and varied food habits, its unusually mild, even climate and the abnormally high percentage of tooth decay in some groups and the freedom from decay in others presents an opportunity for dental observation that is rather unusual. The good health organization on the sugar plantations and the conditioning of the children over many years to medical examinations are a great aid to any human study.

Tooth decay is the most prevalent disease in the world. It is present at all ages, in all races and has been present throughout history. The Iron Age skulls show immunity to tooth decay; the Bronze Age skulls show 37 per cent with decay and 11 per cent of all the teeth decayed or missing; the ancient Egyptians' skulls showed 51 per cent with decay, and 5 per cent of the teeth decayed or missing, and the skulls of the Roman colonists show 85 per cent with decay and 29 per cent of the teeth decayed or missing.[1] At the present time Polynesians in Samoa show 4 per cent with tooth decay,[2] people in Tripolitania 49.89 per cent [1] and one group in Hawaii 99.9 per cent.[3]

In a study of 74 infants [4] on a rice diet almost 100 per cent showed tooth decay and almost 50 per cent of all erupted teeth were decayed. Of another group of 42 infants whose rice (acid residue starch) had been replaced by taro and potatoes (alkaline residue starch) only 7 per cent showed decay, and 4 per cent of the erupted teeth were decayed. Another observation [3] indicated that 22 Polynesian children eating their traditional poi and fish diet had almost perfect teeth (95.41 per cent free from decay), whereas 55 Polynesian children eating rice as their main food showed 98.2

Read before the Section on General Practice of Medicine at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947

Evelyn Schoen organized the many clinics; Doris Larsen did the typing and checking, and nurses and teachers cheerfully helped with the work. The Medical Group Research Fund helped finance the project, which was under the jurisdiction of the Hawaiian Sugar Planters' Association Health Committee.

1. Schottky, J.: Rasse und Krankheit, Munich, J. F. Lehmanns, 1937, pp. 364 and 371.
2. Ferguson, R. A.: J. Am. Dent. A. 21: 534, 1934.
3. Jones, M. R.: Larsen, N. P., and Pritchard, G. P.: Dent. Cosmos 72: 439, 1930.
4. Larsen, N. P.; Jones, M. R., and Pritchard, G. P.: Dental Decay as Indicator of Dietary Fault. Am. J. Dis. Child. 48: 1228 (Dec.) 1934.

per cent with decay. It was also reported [5] at that time from the Island of Tristan da Cunha that among 156 miscegenetic persons eating largely potatoes and fish, 89 per cent had teeth free from decay. In another study on children with rampant decay in Hawaii the daily addition of carotene definitely reduced decay activity.[6] In a group of 779 Japanese children examined in Hawaii in 1930 only 2 had noncarious teeth.[3] In a group of 109 white children examined at the same time, 55.6 per cent were free of decay. They were of comparable ages. The white children ate much more of fruit and vegetables and less of the cereal starches. The water was the same for both groups.

These observations seemed to leave little doubt that diet was the cause of tooth decay, and it seemed logical, since a change from a high acid residue starch diet to a high alkaline starch diet almost completely corrected tooth decay, that the alkaline and acid factor of diet were important. This opinion seemed verified by certain experiments on dogs in which tooth decay became pronounced with the mere addition of acid radicals to the diet.[7] It was concluded in 1930:

> The evidence indicated that dental decay is primarily a systematic disorder, an imbalance perhaps in the tissue fluids and oral secretions, in the direction of a decrease of basic ions, either relative or absolute. . . . It is believed that any type of diet, any factor or combination of factors which tend to decrease the relative or absolute amount of base in the tissue fluids will proportionately increase the liability of the teeth to decay.

MATERIAL

The present study is based on the findings in 866 children between the ages 6 months to 18 years living on sugar plantations and examined in 1946. 180 children studied in 1947 in three selected kindergartens and 104 children recently arrived from the war-torn Philippines. Table 1 presents the number in each racial group. Although on the plantations the Japanese are the most numerous, present vital statistics show that Caucasians lead among the population groups in Hawaii, with 173,533 as compared with 168,463 Japanese.[8] There are only 10,000 surviving Hawaiians.

TABLE 1.—*Tooth Decay by Nationalities*

Nationality	No. of Children	No. of DMF*	Decay-Free Teeth	Percentage DMF* All Teeth	Percentage of Children with Decay-Free Teeth
Japanese	556	6,565	6,525	50	1.0
Filipino	226	2,147	4,111	34	5.6
Miscegenetic	102	905	1,441	38—	8.8
Chinese	44	430	552	43	6.3
Caucasian	44	286	641	31	11.3
Porto Rican	15	254	100	71	6.6
Korean	5	61	55	52	0.0
Hawaiian	4	68	28	70	25.0
New Filipinos	104	239	1,926	11	49.0
Totals	1,140	10,955	15,479	40	7.9

*Teeth decayed, missing or filled.

The Dental Research Committee[9] of the Honolulu Dental Association with the use of tongue blades, explorers, mouth mirrors and natural light made the dental examinations. Each had a secretary recording on a dental chart the type, location and degree of decay activity. Most of the children were given a general physical examination by the late Dr. H. Best and by me. A number had roentgen examination of the chest and other laboratory tests. Dietary histories were taken by trained personnel with the use of dietary forms.

The children were from three plantation groups and all except the new Filipinos were in a condition of vivacious health. Plantation group 1 was resident on a large sugar plantation. Group 2 was on a similar plantation, 8 miles (12.9 kilometers) away, but on which there had been a daily teaching diet clinic involving over 250 children since 1930. Group 3 was a selected plantation group in an English-speaking school located near group 1. Group 4 were newly arrived Filipinos who were undernourished, anemic and heavily infested with intestinal parasites.

RESULTS OF PHYSICAL EXAMINATION

The pertinent findings of the physical examination are given in table 2. The height and weight figures of the poorly nourished Filipino children actually show 10 per cent fewer in the underweight group for height than were found in the healthy children. However, when the figures are corrected for age, 75 per cent of the Filipinos are undersized compared with 34 and 44 per cent of the others.[10] The Filipinos have a high percentage of distended abdomens; more are rated thin; fewer have firm muscles, and most of them have large cervical glands. Yet the majority have normal-appearing tonsils, and 89 per cent of their teeth are free from decay. The local, and by comparison, healthy children's teeth are extremely poor. This suggests that general poor or good health is not related to tooth health, also that large cervical glands are possibly an indication of general poor health.

TABLE 2.—*General Physical Examination*

Condition	Percentages Plantation I	Plantation II	New Filipinos
Underweight by height	44	30	34
Underweight by height and age	34	44	75
Pathologic changes of skin	5	13	31
Rated thin	8	18	27
Firm muscles	62	66	9
Decayed teeth	99.2	95.9	51
Tonsils 1+ to 4+	43	73	37
Large cervical glands	2	17	66
Heart murmurs: total, 3.5			
Belly circumference larger than chest	0.8	7	23
Hemoglobin under 75	0	22	50
Preventive inoculations (more than five)	50	90	0

Other findings of interest were 2 cases of mild rickets and 68 cases of Harrison's groove. The latter is frequently considered a sign of rickets, but in Hawaii, where children can be exposed to seven and one-half hours of sunshine daily, rickets is rare. It does occur in some young infants when racial fears and superstition keep them indoors. Harrison's groove is probably not an indication of rickets, but more likely an accompaniment of nasal obstruction or other breathing difficulty in the early years.

RESULTS OF DENTAL EXAMINATIONS

The dental examination indicated that of 20,492 teeth of plantation children 8,473, or 41 per cent, were decayed, missing or filled. The 180 kindergarten children had 3,677 teeth, of which 2,042, or 55 per cent were decayed, missing or filled. Among the 104 immigrant Filipinos only 11 per cent of the teeth were decayed, missing or filled (table 3). The percentage of decay in the permanent teeth in relation to age is given in table 4. This table also compares the Hawaii figures with those presented in the studies of Knutson,[11] as well as in a study from Panama.[12] The Hawaiian children have more tooth decay than any of the other groups.

5. Bee, A. G.: Dent. Cosmos **74**: 1031, 1932.
6. Larsen, N. P.; Pritchard, G.; Wilbar, C., Jr., and Ward, A. L.: Proc. Pacific Sc. Cong. **6**: 569, 1939.
7. Jones, M. R., and Simonton, F. V.: Am. J. Physiol. **79**: 694, 1927.
8. Annual Report of the Board of Health, Territory of Hawaii, 1946, p. 35.
9. Drs. D. H. Uyeno, H. L. Houvener, Arthur Luhr, S. W. Glynn, Y. Nakata, J. M. Marnie, F. W. Davidson, A. Brash, George Pritchard, A. Richardson, J. Richardson and T. Uyeno.
10. Faber, H. K.: Weight Range Table for Children from 5 to 15 Years of Age, Am. J. Dis. Child. **38**: 758 (Oct.) 1929.
11. Knutson, J. W.: Pub. Health Rep. **59**: 253, 1944.
12. Chapin, R. W., and Mills, C. A.: J. Dent. Research **21**: 55, 1942.

Tooth Decay by Race.—Tooth decay by race is shown in table 1. Thirty-seven per cent of the teeth in 278 Filipino children reared in Hawaii were decayed against 11 per cent of the teeth in the newly arrived. Of the latter 48 per cent of the children were free of decay, whereas of the local Filipinos only 4.7 per cent had no decay. This observation changed an opinion which had been expressed in a previous paper [9]; namely: "A condition of excessive dental decay can be used as an indicator of a dietary fault. This fault is associated with a high infant mortality and morbidity." The Japanese with 50 per cent of all erupted teeth decayed and only 1 per cent with decay-free teeth are in sharp contrast to the Caucasians with 31 per cent decayed teeth and 11.3 per cent of whom have decay-free mouths. Both groups used the same water and both came from a temperate climate to a subtropical climate.

TABLE 3.—*Tooth Survey, Plantation Children*

		Total Teeth Examined 26,285 Total Teeth Decay-Free 15,560 Total Teeth DMF* 10,727					
	Divided into groups as follows:				Total	Total Decay-Free	Total Teeth
	Children	Decayed	Filled	Missing	DMF*		
Plantation 1	399	2,802	1,142	485	4,429—45%	5,384	9,813
Special group, plantation 1	98	349	237	58	744—34%	1,420	2,164
Plantation 2	369	2,272	771	230	3,273—38%	5,193	8,466
Kindergartens	180	1,684	242	116	2,042—55%	1,635	3,677
New Filipinos	104	233	4	2	239—11%	1,926	2,165

* Decayed, missing or filled.

TABLE 4.—*Age Incidence of Decay in Permanent Teeth*

	6	7	8	9	10	11	15
Hawaii							
No. children	95	160	26	5	45	69	155
DMF* per child	1.04	2.0	2.8	4.4	4.2	5.8	11.8
Percentage DMF*	71	75	96	100	95	100	99.3
Maryland							
No. children	327	403	487	493	529	531	651
DMF* per child	0.29	0.73	1.20	2.02	2.51	2.84	6.64
Percentage DMF*	15.9	36.2	53.4	70.6	78.3	81.9	95.4
Minnesota							
No. children	253	252	276	282	276	265	159†
DMF* per child	0.51	1.43	2.30	2.86	3.39	4.16	7.69
Percentage DMF*	24.3	53.6	75.7	84.0	86.2	89.8	94.3
Panama							
No. American children							174†
DMF* per child							8.4
No. natives							659†
DMF* per child							8.09

* Teeth decayed, missing or filled.
† Fourteen year age group.

Location of Decay in the Mouth.—Regarding the location of decay in the mouth (fig. 1) it is evident that the upper incisor and canine teeth were more frequently decayed than the lower (upper incisors 82 per cent with decay to 17 per cent of the lower; upper canine teeth 64.5 per cent to 35.5 per cent of the lower). In the molars 5.4 per cent more lower teeth were decayed than upper. Although this latter seems a small difference, the chi square value indicates that the finding has a definite significance. The cleansing action of the tongue rubbing constantly against the lower incisors, less against the canine teeth and not at all on the molar, may be a factor to account for the differences. This may also account for the more frequent decay of the buccal surface than the labial.

GENERAL HEALTH

The health of the Hawaiian children, as shown by such criteria as infant and maternal mortality, general morbidity rate, deaths from beriberi and general appearance of well-being, had improved a great deal since 1930,[13] but their teeth were still poor. The forms for the mass diet survey were analyzed in toto by two physicians. However, the information as to how much each child drank of milk or ate of protein, fruit, vegetable, sweet and cereal came from the people in terms of times a day consumed or in cupfuls. Figure 2 contains a tabulation of the food eaten by 44 children with excellent teeth (0.7 decayed, missing or filled per mouth) and 60 children with poor teeth (17.3 decayed, missing or filled per mouth). As has been indicated, it is a comparison of times per day eaten rather than the measured amount consumed. The sweets and cereals are the only two food groups showing a striking difference. Considerably more of these were eaten by the group with poor teeth than by the other group. One surprising finding was the occasional inclusion of one to three bottles of "coca-cola" per day. Recent studies on rats, dogs and monkeys have shown cola drinks with a pH of 2.6 readily etching enamel, possibly the initial lesion of tooth decay. The addition of sugar to an acid greatly increases the damaging effect of the acid on enamel.[14] McCay and associates concluded, "Acid foods and beverages may be an important factor in the little understood phenomenon of human tooth erosion." A small amount of fluorine reduced this activity.

Figure 3 contains a tabulation of a careful one year diet study of ten Japanese plantation families on a low intake of protective food and ten families on a higher

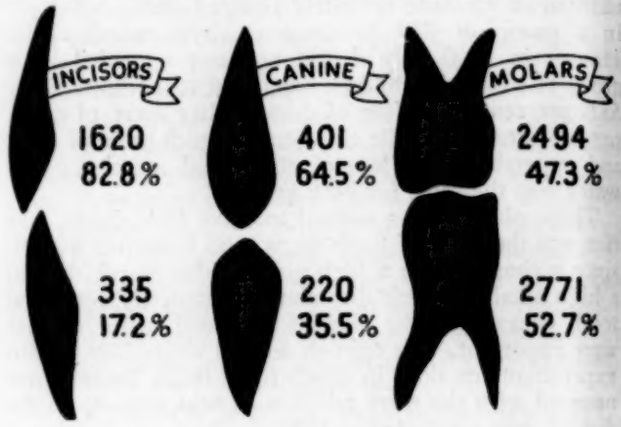

Fig. 1.—Percentage of decay in upper and lower teeth, plantations 1 and 2.

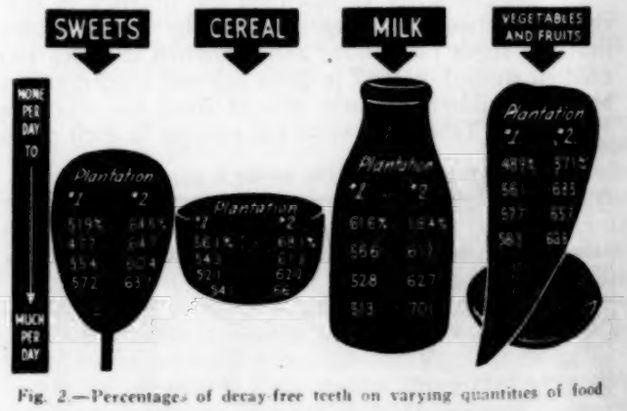

Fig. 2.—Percentages of decay-free teeth on varying quantities of food

13. Filipino infant mortality was 220.3 in 1929, 29.5 in 1945; maternal mortality 6.87 in 1930 and 0.8 in 1945. Total death rate from beriberi was 18.8 in 1930, and 0.8 in 1945.[8]

14. McCay, C. M.; Restarski, J. S., Gortner, R. A., and Schlack, C. A.: Research Project X-418, Reprints 1, 2 and 4, Bethesda, Md., U. S. Naval Medical Research Institute, 1946.

intake of protective food. Both groups (83 children) had poor dental health. However, when a measles epidemic struck, the children on the higher protective foods had half as many days of illness in bed and no serious complications. The other group had 3 deaths.[15] This may also suggest that immunity to decay is not related to ordinary resistance to disease. These diets are compared with a proposed minimum adequate diet

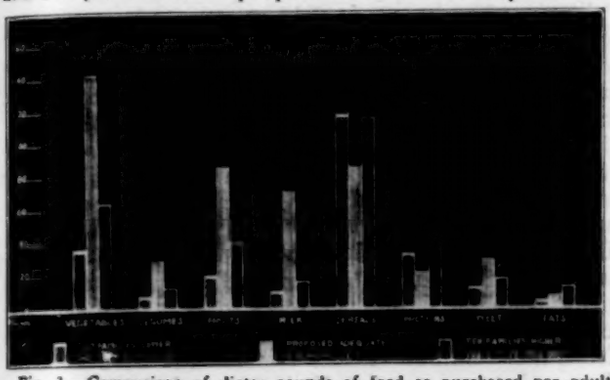

Fig. 3.—Comparison of diets; pounds of food as purchased per adult male unit per day.

as suggested by authorities in nutrition. The local Oriental diets are shown to be low in vegetables, legumes, fruits, milk and even sweets. They are high in cereals and proteins. Even those children whose diet in their early years was prepared by the Health Center (poi, milk and vegetable soup) soon reverted to their high rice diet. An examination was made of 239 children who were over 6 years of age and who had been fed in the first year or two at the Health Center. They had 5,824 teeth of which 2,377 were decayed, 40.81 per cent. There was only 1 perfect set. Four hundred and five children on the nonclinic plantations over 6 years old with 10,283 teeth showed 4,283 with decay, 41.65 per cent, a mathematically insignificant difference. Although these children get fruits and vegetables, they also get an abundance of bread and rice. An alkaline residue diet with daily excess in the ash equal to 80 to 100 cc. of normal solution (our previous recommendation for sound teeth) cannot be accomplished on rice three times a day. Although the daily Health Center feeding, along with a general increased intake of fruit and vegetables in the plantation diets and a decrease in rice,[16] helped the general well-being, the effect on tooth decay was negligible. The diet of the early years which produced a lowering of decay in the teeth did not produce a decay-resistant enamel. The "diet" plantation produced 66 per cent with perfect sets of teeth in the group 6 years of age and younger; 87 per cent of all the teeth were free from decay. In the same age group on the "nondiet" plantation 9 per cent of 127 children had perfect sets and 41 per cent of the teeth were free of decay.

POLYNESIAN AND ORIENTAL DIETS.

In a previous study the extreme dietary differences between the Polynesian and the Oriental was compared.[3] Here the difference seemed largely in the type of starch, rice being acid residue and taro being alkaline residue. In these groups there was a striking difference in tooth decay. The children on Polynesian diets had almost no decay, whereas the Polynesians on an Oriental or high rice diet showed 98.2 per cent with decay. Between these two extremes there was a mixture of these diet factors and also a rather mixed condition of tooth decay. The diets that fell between these two extremes were associated with a combination of good and bad teeth in varying percentages. This was shown in another study[6] in which the food eaten was carefully tabulated. Increasing amounts of taro, fruits and vegetables were called good, and increasing amounts of rice or bread were called bad. The children on "good" diets had 19 per cent of their teeth decayed, whereas those on "bad" diets had 47 per cent. Although there is a certain amount of variability in human beings there does come a point in dietary intake which in spite of other conditions (climate, sunshine, heredity, tooth structure, tooth cleanliness, water, etc.) is associated with excellent teeth and another level of dietary intake which is associated with almost 100 per cent tooth decay. Either of these diets is compatible with general good health.

FLUORINE AND OXALATES

Recent studies in Hawaii have shown that the water of the Territory is low in fluorine, 0.02 to 0.2 parts per million. According to Nekomoto,[17] "More serious development of caries by men enlisted at Scofield (Hawaii) than any other army post is consistent with low fluorine intake there—0.16." It has been shown that sea foods[18] are high in fluorine. It has also been shown that the oxalates present in taro and absent in rice give a form of surface protection (in rats) that apparently provides

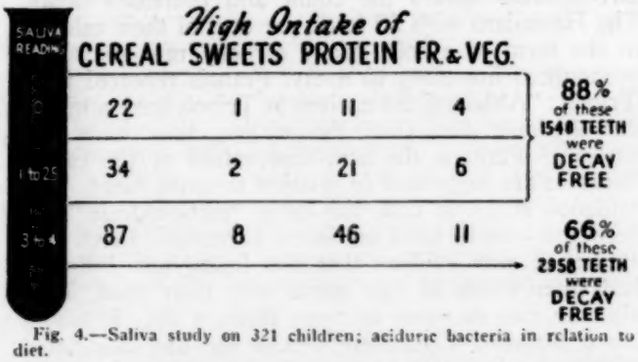

Fig. 4.—Saliva study on 321 children; aciduric bacteria in relation to diet.

as much decay resistance as fluorine.[19] The possible importance of these two factors were unknown when the earlier observations were made. Perhaps their value in the role of prevention of tooth decay is as important as the previously mentioned acid-base factor.

ACIDURIC BACILLI

A bacteriologic study was conducted on 321 of these children by Dr. Floyd Hartmann of the University of Hawaii.[20] The studies were based on two or more samples of saliva. The child chewed paraffin for three minutes before spitting into a clean glass container. This was taken to the laboratory where 0.2 cc. was cultured in 5 cc. of bromocresol green dextrose agar. The cultures were read on each of the following four days. Specimens of sputum were cultured for types of bacteria, and the color test was checked with actual counts of the number of aciduric micro-organisms. The results verified the concept[21] that the simple color test is a good

15. Larsen, N. P.: Compt. rend. Cong. de F. E. A. T. M. **1**: 133, 1939.
16. Rice importation in 1930 was 92,000,000 pounds; in 1946 it was 67,000,000 pounds.
17. Nekomoto, R. S.: Fluorine in Hawaiian Water, Honolulu, University of Hawaii Library, 1945.
18. Tsuji, F.: Fluorine and Florides and Relation to Dental Caries, Honolulu, University of Hawaii Library, 1947. Sognnaes, R. F.: J. Dent. Research **20**: 303, 1941. Sognnaes, R. F., and Armstrong, W. D.: ibid. **30**: 315, 1941.
19. Gortner, R.; Restarski, J. S.; Schlack, C. A., and McCay, C. M.: Research Project X-418, Reprint 3, Bethesda, Md., U. S. Naval Medical Research Institute, 1946. Gortner, R. A., Jr., McCay, C. M.; Restarski, J. S., and Schlack, C. A.: J. Nutrition **32**: 121, 1946.
20. Hartmann, F. W.: A Bacteriological Caries Survey Method Applied to Plantation Children, J. Am. Dent. A., to be published.
21. Snyder, M. L.: J. Am. Dent. A. **28**: 44, 1941.

indicator of the number of aciduric bacilli present. Enright reported [22]: "The only micro-organism commonly found in food debris that can tolerate and produce additional acid in an environment below *p*H 5 . . . is a lactobacillus . . . its final *p*H . . . ranges from 3.6 to 4.8." Such acidity readily dissolves enamel. The color test was not found to be an index of production of acid by yeasts. When the color reading was low (0 to 2), indicating a low percentage of aciduric bacteria, 88 per cent of the teeth were free from decay. When the reading was high (3 to 4) 66 per cent of the teeth were free from decay (fig. 4).

Correlations were attempted relative to diet and the salivary study. Forty-seven per cent of the children had high salivary counts, and the majority were high cereal eaters. Sixty per cent of 143 children on a high cereal diet had high aciduric counts. The numbers in the other groups were too low to be significant, although the 11 high sugar eaters did have the highest aciduric percentages, 72. Fulton [23] stated that less than 1,000 lactobacilli per cubic centimeter indicates immunity to tooth decay; counts up to 15,000 moderate susceptibility, the higher the count the greater the susceptibility. This has been repeatedly verified but always with exceptions. Twelve per cent of the teeth in the present study associated wth low counts showed decay, and 66 per cent of the teeth with high counts showed no decay. Many observers have reported that lowering the intake of carbohydrate lowers the count and decreases decay. The Hawaiians with 50 to 80 per cent of their calories in the form of a soft, sticky carbohydrate showed a pronounced immunity to decay. Francis reported from Tripoli: "Although the natives in Tripoli have a higher carbohydrate diet than the whites, they have less caries." [1] Perhaps the acid-base values of the carbohydrates are important in relation to tooth decay. This evidence suggests that the term "carbohydrate" has been too loosely used in dental literature. From diet studies it was evident that the immigrant Filipinos had eaten freely of raw sugar with their food. They also ate rice as often as three times a day. It was a home threshed rice. Nevertheless the diet associated with such a low percentage of decay was high in carbohydrate and did contain considerable sugar. Did it contain sufficient protective elements?

COMMENTS

Collins and his associates [24] indicated that caries-immune students averaged an intake of 10.5 teaspoonfuls of sugar a day. (That would allow each per day one Hershey bar, three sticks of chewing gum, one marshmallow, one "life saver" and a tablespoonful of maple syrup). Caries-susceptible students averaged 18.2 teaspoonfuls. He reported that some of the high sugar eaters were immune to caries and some of the low sugar eaters had active caries. This would suggest that it was not the sugar, per se, but the excess of sugar when protective factors were absent. Excess intake of sugar tends to lessen the intake of other food, probably including protective substances. Further evidence is added by Percy Howe's 8 monkeys which were fed adhesive sugar balls twice daily for eight months with no caries developing.[22] Were protective factors, inhibitors of aciduric bacteria (oxalates, fluorine, acid neutralizers or vitamin K) present in sufficient amounts in these caries-immune mouths?

The reported observations in Hawaii suggest that other factors than the acid-base balance or vitamin A may account for the striking difference in decay in various groups of children observed. Heredity does not seem to play an important role in this condition. Hawaiians on the Polynesian diet for eight hundred years had excellent teeth, while first generation Hawaiians on the Oriental diet had poor teeth. Filipino children in Hawaii had much tooth decay, while Filipino children in the Philippines had little.[25] It did not seem to be a climate or "tropical" factor, since Hawaiians had excellent and poor teeth, Orientals extremely bad teeth and Caucasians fair teeth. It was not a roughage food factor, since Hawaiian poi is a soft, sticky, starch paste, more so even than rice. It also suggests that carbohydrates per se were not the causative factor. Sugar per se did not seem to be the factor, since many with severe decay were low sugar consumers, and vice versa. It was not a vitamin D deficiency since the Oriental as well as the Polynesian was exposed to seven and one-half hours of sunshine daily. Vitamin C did not seem to be a factor in the control of tooth decay. Scurvy is rare in Hawaii, where fruits are plentiful. Vitamin A seemed to have some influence but was not the whole factor. It is still recommended in pregnant women to affect favorably the development of the enamel organs.[26]

Fluorine may be a factor, since, although the water is the same for all races, the Hawaiians on their ancient diets consumed much sea food which is high in fluorine. They probably also swallowed more ocean water, which is high in fluorine. A Hawaiian brakish well showed 2.22 parts per million of sodium fluoride. They also ate much taro and poi, which is high in oxalate, a possible preventive of tooth decay, as might be vitamin K, present in raw sugar cane.[18] Perhaps the excellence of Eskimo teeth also came from the high fluorine content of their sea food. Sognnaes has added proof to that possibility in a recent report from Tristan da Cunha. The water of Tristan is low in fluorine, 0.2 parts per million; yet in 1938 when a potato shortage forced the people to eat a greater amount of fish, 15.8 per cent of the young people had white spots on their teeth (mild fluorosis), and teeth analyzed from Tristan were high in fluorine. A previous study [6] had shown no white spots. Coast natives of New Guinea eating more fish had less decay than inland natives, said Kilpatrick.[22] It indicates that sufficient and even excessive fluorine can at times be obtained from seat foods in sections where fluorine in the water is extremely low.

One hundred and fifty children with rampant decay are at present being studied with the ingestion of tablets [27] containing 2 mg. of calcium fluoride plus vitamins C and D.[28] At the end of four months there was little or no change in the aciduric color test, and the dentist's report was not convincing. More study is necessary.

Is it possible that high alkaline residue diets fill the enamel canals with alkaline dental lymph? With the addition of oxalate and fluorine to inhibit the growth of aciduric bacteria and prevent the resultant acid from etching the enamel, the tooth gets further protection. A rice diet producing dental lymph with a *p*H of 5 could enhance the growth of aciduric bacteria. The addition of oxalate and fluorine alone may be able to inhibit deleterious acid action, although in studies in

22. Dental Caries, Research Committee of American Dental Association, New York, 1939.
23. Fulton, J. T.: Connecticut Monthly Health Bull., 1946.
24. Collins, R. V.; Jensen, A. L., and Becks, H.: J. Am. Dent. A. **29**: 1169 1942.
25. In the appendix a sample diet of postwar Filipinos is given.
26. Boyle, P. E.: J. Dent. Research **13**: 39, 1933. Wolbach, S. B., and Howe, P. R.: Am. J. Path. **9**: 275, 1933.
27. The tablets were supplied by Ayerst, McKenna & Harrison, Ltd.
28. Strean, L. P., and Beaudet, J. P.: New York State J. Med. **45**: 2183, 1945.

cities [29] with water high in fluorine (caries experience rate 240) as against cities with water low in fluorine (caries experience rate 740), it would seem that something more than fluorine is needed to attain the perfection of the Hawaiian and Filipino teeth, and something besides the lack of fluorine seems necessary to account for the extremely decayed teeth of the Japanese. Recently the members of the dental profession have recommended painting each child's teeth twice a year with 2 per cent sodium fluoride solution. This, it is said, will reduce decay 40 per cent.[30] However, Ast cautioned, "Let us be patient to await conclusive evidence before we make up our minds on the merits of fluorine therapy." [31]

Fig. 5.—Odontoclasia, rampant enamel decay common in Hawaii.

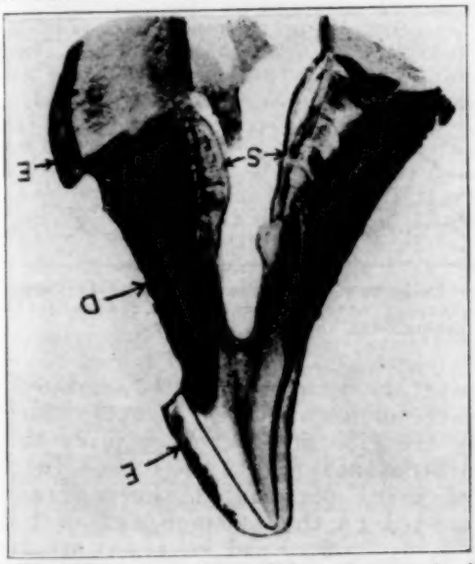

Fig. 6.—Odontoclasia, rampant enamel decay (microscopic slide prepared by Dr. C. Boedecker).

Factors which allow the uninhibited growth of aciduric bacteria and allow their products to etch enamel could be a starting point for decay. The deciduous teeth with larger canals in dentin and enamel and more protein substance in these canals allow a more rapid destruction of teeth, odontoclasia. This form of rampant enamel decay is frequently seen in Hawaii (figs. 5 and 6).

In the diet studies it sometimes took two months on a changed diet before the excretary fluids became alkaline. With some children the change occurred more rapidly; with others, more slowly.

To correct tooth decay by diet, the correction must be quantitative as in a change from large amounts of rice to large quantities of taro, or else there must be present the optimum of a protective factor. This protective factor must inhibit aciduric bacteria or the enzymes or neutralize the acid produced. Although the diet was greatly improved in the clinic children, rice was not eliminated, foods containing sufficient protective substance were not eaten, and no protection was obtained from the water with its low fluorine content. In spite of the improvement in the general health, there still remained a high percentage of tooth decay. The cause of tooth decay is not yet solved, but the quest is narrowing to fewer variables.

SUMMARY

Conditions producing good general health were found to be associated with severe tooth decay, and conversely, poor health was associated with excellent teeth. Harrison's groove is probably not caused by rickets, and height and weight values must be related to specific age levels to be of most value.

Heavy carbohydrate eaters (Polynesians on taro) had excellent teeth, and heavy carbohydrate eaters (Orientals on rice) had extremely poor teeth.

Hawaiian waters are low in fluorine; sea foods are high in fluorine and can affect teeth. Hence, people in areas with water low in fluorine may have good teeth with high fluorine content.

Oxalates high in taro and low in rice may be one of the factors favoring immunity from decay.

The observations in Hawaii tend to verify the role of aciduric bacteria as an index of decay immunity and that oxalates and fluorides, as well as the alkaline residue food values in the Hawaiian diet, might account for decay resistance in certain groups in Hawaii. These factors are more important in preventing decay than climate, heredity, cleanliness of the teeth or specific food factors including sugar.

APPENDIX

Diet of 2 Postwar Filipinos.—Two postwar Filipinos aged 3 years and 7 months and 4 years and 7 months, respectively, each had twenty perfect deciduous teeth. They ate rice (three times a day), had a sweet cake of rice flour and molasses rolled in banana leaves (twice a week), taro (three times a week), fruit and vegetables (four times a day), meat (twice a week) and candy (once a day); they chewed sugar cane frequently. They drank no milk.

ABSTRACT OF DISCUSSION

Dr. William Wolf, New York: I should like to ask the essayist whether in the treatment of these children with the fluoride tablets it is not the menstruum which prevented the good results which he could have gotten perhaps by using it in different form. Dr. Samuel Charles Miller in New York has done considerable study in this line, and I was wondering what the essayist's experience has been in using fluorine in a different form, such as in solution without sugar content. It seems, according to Dr. Miller, that the sugar content of the tablets nullifies much of the good effects of the fluorine.

Dr. Sixto Y. Orosa, Manila, Philippine Islands: Allow me to extend to you the greetings of over 5,000 Filipino physicians in active practice. Now coming to the paper, may I say that the pictures shown of 2 Filipino children are hardly typical of the ordinary Filipino children. It is true that during the Japanese occupation and even now after we have been liberated by America, we still have undernutrition and the effects of undernutrition, such as tuberculosis. During the occupation the Japanese got every particle of food and other

29. Dean, H. T.; McKay, F. S.; Armstrong, W. D.; Bibby, B. G. and Ast, D., in Symposium on Fluorine in Dental Public Health, New York, Institute of Oral Pathology, 1944, p. 25.
30. Treatment to Check Decay, Science New Letter **51**: 180, 1947.
31. Ast, D. B., New York J. Dentistry **15**: 8, 1946.

things that they could get hold of from us, and I really do not know how we have managed to live up to now. It is easy to understand why malnutrition was common during the Japanese occupation and, as I said, following malnutrition were diseases such as beriberi, tuberculosis and heart disease.

DR. NILS P. LARSEN, Honolulu, Hawaii: As to the question of some other form of fluorine, I think that might be preferable. The fact that some dentists have been able to paint a 2 per cent solution of sodium fluoride on one half of the teeth and not on the others, and produce a 40 per cent decrease of decay on the treated side only, would indicate that if one had a fluorine product that would absorb well into the enamel perhaps one could better the results. However, perhaps my associates and I should have waited longer, but we did not have time. If we go by the literature—of course, we must be careful after Dr. Alvarez' paper in depending too much on these scientific and laboratory reports. Nevertheless, if one has not been able to influence in four months the aciduric bacteria of the mouth, one has no right to assume that the calcium fluoride tablets will succeed later in reducing tooth decay. As to the gentleman from the Philippines, we appreciate with deep feeling the terrific suffering which the Filipinos have experienced. Over 12,000 Filipinos had to be checked to get 6,000 able to work on our plantations. We picked two of the children who illustrated the distended abdomens and soft muscles which we found in the majority of those examined. However, in spite of the fact that these children were in such poor condition, due to the horrors of the war and the starvation they had to go through, of the total number of teeth in these 104 Filipino children, only 11 per cent showed decay and 48 per cent of the children had perfect mouths. The point there is that the right food for teeth is not necessarily the right food for good general health.

EFFICIENCY OF GASTROINTESTINAL TRACT AFTER RESECTION OF HEAD OF PANCREAS

ERIC E. WOLLAEGER, M.D.,
MANDRED W. COMFORT, M.D.,
O. THERON CLAGETT, M.D.,
and
ARNOLD E. OSTERBERG, Ph.D.,
Rochester, Minn.

When resection of the head of the pancreas is carried out, partial gastrectomy, total duodenectomy and some sort of anastomosis between the biliary tract and the stomach or small intestine are integral parts of the operative procedure. Such extensive surgical operations cannot be done without interfering to some degree with the normal functioning of the gastrointestional tract. It was the purpose of this study to assess the degree of impairment of the digestive and absorptive functions of the gastrointestinal tract brought about by this operation and to evaluate ways by which such impairment of function could be reduced. This was done by means of intake-excretion studies with standard test diets. Similar studies of normal persons had previously been carried out with two of the same test diets for control purposes.

Dr. Osterberg is now at Abbott Laboratories, North Chicago, Ill.

Read in a Symposium on the Pancreas before the Section on Gastro-Enterology and Proctology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J. June 11, 1947.

SUBJECTS STUDIED

Ten patients who had undergone resection of the head of the pancreas consented to be studied. Two of them (cases 4 and 5) had been operated on for severe chronic pancreatitis. The other 8 had been operated on for carcinoma, which was situated at the ampulla of Vater in 4 cases (cases 1, 2, 3 and 8), in the duodenum in 1 case (case 7) and in the head of the pancreas in 3 cases (cases 6, 9 and 10). Figures 1 and 2 illustrate diagrammatically the surgical procedure which had been carried out in each case. In 3 cases (cases 1, 2 and 3) the pancreatic ducts had been ligated, thus preventing the flow of pancreatic juice into the gastrointestinal tract. In 1 case (case 4), the remaining portion of the pancreas was anastomosed to the stomach and in 6 cases (cases 5, 6, 7, 8, 9 and 10) it was anastomosed to the jejunum. Further pertinent clinical data concerning the 10 patients are summarized as follows:

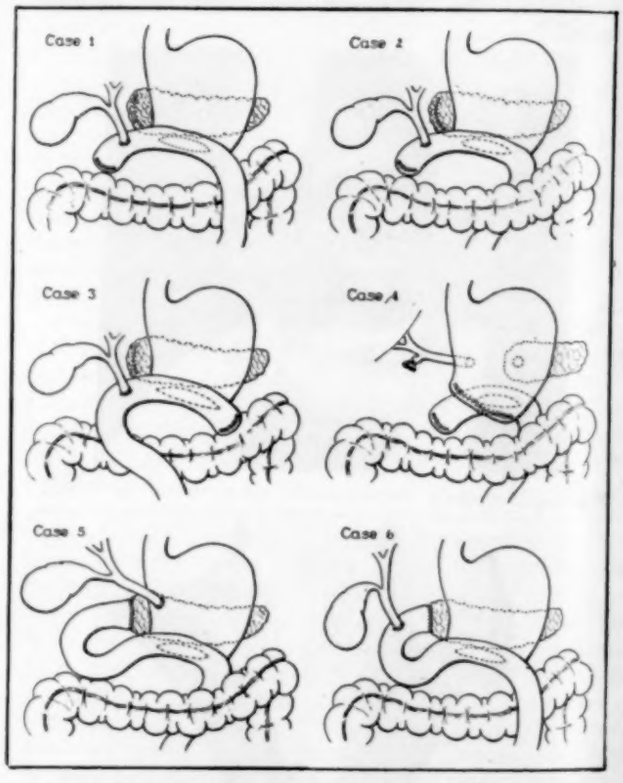

Fig. 1—Diagrammatic representations of the upper part of the gastrointestinal tract after the surgical procedures carried out in cases 1 through 6.

CASE 1.—The patient, a man aged 30 years, complained that he had had easy fatigability for one year and jaundice for two months. He stated that cholecystoduodenostomy had been performed six weeks prior to his examination at the Mayo Clinic. Resection of the head of the pancreas, the distal 8 cm. of the stomach and 15 cm. of the duodenum was performed on April 18, 1944. The pathologic diagnosis was multicentric mucous adenocarcinoma, grade 1 (Broders' method), involving the ampulla of Vater, common bile duct and pancreatic duct. Intake-excretion studies were begun one month after operation. The patient was having two or three bowel movements per day and made no complaints con-

cerning his abdomen. His weight was 121 pounds (54.9 Kg.) as compared to a customary weight of 170 pounds (77.1 Kg.) before the onset of his illness. A letter from the patient in March 1946 stated that he was feeling well and weighed 145 pounds (65.8 Kg.). He was taking fifteen pancreatin tablets (5 grains [0.3 Gm.] each) per day. A letter in January 1947 stated that he was becoming jaundiced.

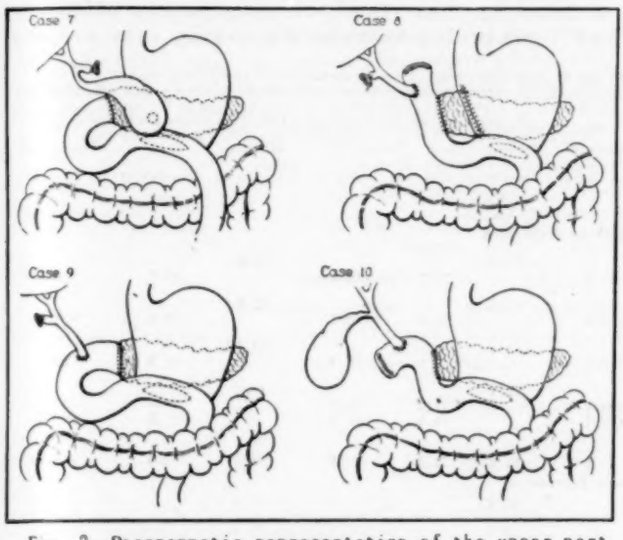

Fig. 2—Diagrammatic representation of the upper part of the gastrointestinal tract after the surgical procedures carried out in cases 7 through 10.

CASE 2.—The patient, a woman aged 54 years, complained that she had had epigastric distress, occasional vomiting and constipation for one year. She had lost 25 pounds (11.3 Kg.). Two years previously she had undergone cholecystogastrostomy at the Mayo Clinic because of jaundice of two weeks' duration. A tumor of the head of the pancreas had been found at that time. Resection of the head of the pancreas along with the distal 15 cm. of the stomach and 36 cm. of duodenum and jejunum was carried out on Jan. 13, 1945. The pathologic diagnosis was adenocarcinoma, grade 1 (5 by 3 by 1 cm.), of the ampulla of Vater, with extension into the head of the pancreas. Intake-excretion studies were carried out six months later. The patient had gained 7 pounds (3.2 Kg.) since operation. She took fifteen enteric-coated tablets of pancreatin with each meal. She made no complaints concerning her abdomen and passed one or two stools per day. Her weight was 97 pounds (44.0 Kg.). Her customary weight before her illness had been 130 pounds (59.0 Kg.). When last heard from, in January 1947, the patient stated that she was feeling well. She was taking fifteen pancreatin tablets (5 grains [0.3 Gm.] each) with each meal. Her weight was 112 pounds (50.8 Kg.).

CASE 3.—The patient, a woman aged 67 years, complained that she had had abdominal pain and a loss of 30 pounds (13.6 Kg.) during the previous year. Resection of the head and a portion of the body of the pancreas along with the distal 6 cm. of the stomach and 11 cm. of the duodenum was carried out on March 9, 1944. The pathologic diagnosis was adenocarcinoma, grade 1 (7 by 5 by 3 cm.), of the ampulla of Vater. Intake-excretion studies were carried out one year later. At this time she complained of diarrhea with passage of six to eight large stools a day since her operation. There had been a 15 pound (6.8 Kg.) loss of body weight. Diabetes mellitus had been discovered seven months after operation and had been controlled with 6 units of protamine zinc insulin and 12 units of regular insulin per day. The patient's average weight before her illness had been 155 pounds (70.3 Kg.). Her weight at the time of study was 113 pounds (51.3 Kg.). When last heard from, in December 1946, the patient stated that she was feeling well, was having normal elimination and weighed 130 pounds (59.0 Kg.). She was taking five pancreatin tablets (5 grains [0.3 Gm.] each) with each meal.

CASE 4.—The patient, a man aged 40, complained that he had had recurring attacks of severe abdominal pain for nine years. He stated that for this pain he had undergone cholecystostomy in 1935, cholecystogastrostomy in 1936 and gastroenterostomy in 1940. Resection of the head of the pancreas, the distal 3 cm. of the stomach and 14 cm. of the duodenum and removal of the gallbladder were performed on Dec. 7, 1944. The pathologic diagnosis was pancreatitis, grade 4 (on the basis of 1 to 4, in which 1 designates the mildest and 4 the most severe condition). At the time of operation the entire pancreas was found to be decidedly fibrosed and its ducts were dilated. Biopsy of the body of the pancreas showed chronic pancreatitis, grade 4. Two months after operation analysis of gastric contents after stimulation by an Ewald test meal revealed no free hydrochloric acid. After stimulation with histamine there was no free hydrochloric acid in the first four specimens of gastric contents withdrawn at ten minute intervals but in the fifth, sixth and seventh there were 10, 20 and 26 units of free hydrochloric acid respectively. A secretin test with the tube in the stomach revealed the *p*H of the gastric contents to vary between 6.4 and 6.6 before administration of secretin and from 6.4 to 7.2 after its administration. There was some diastase and tryptic activity after stimulation but the amounts were subnormal. Intake-excretion studies were carried out two months after operation. The patient had gained about 10 pounds (4.5 Kg.) since operation and was having two bowel movements per day. His weight was 132 pounds (59.9 Kg.). His customary weight before the onset of his illness had been 138 pounds (62.6 Kg.). The patient returned to the clinic for examination in May 1945 and January 1946. Both times his main complaint was of persistent edema of the ankles. He had experienced no recurrences of abdominal pain. His bowels moved five or six times a day even when he took fifteen tablets (5 grains [0.3 Gm.] each) of pancreatin with each meal. There was evidence of chronic renal disease, which was thought to be the main cause of his edema. Insufficiency of external pancreatic secretion with malnutrition was considered to be a contributing cause. There had been no loss of weight (weighed when edema free).

CASE 5.—The patient, a man aged 37 years, complained that he had had recurring attacks of severe pain in the upper part of the abdomen for fifteen years. Resection of the head of the pancreas, the distal 5 cm. of the stomach and 15 cm. of duodenum was performed on Jan. 19, 1945. The pathologic diagnosis was pancreatitis, grade 4, with pancreatolithiasis. Intake-excretion studies were carried out six months after operation. The patient had experienced two attacks of pain in the upper part of the abdomen since operation. He weighed 125 pounds (56.7 Kg.), a loss of 10 pounds (4.5 Kg.) from his usual preoperative weight of 135 pounds (61.2 Kg.). He complained of diarrhea with four to six large stools a day.

In February 1947, the patient returned to the Mayo Clinic because of recurring attacks of severe pain in the upper part of the abdomen without jaundice for eight months. At surgical exploration he was found to have an inflamed gallbladder contain-

ing one stone. This organ had been found to be normal at the time of his previous operation. Cholecystectomy was performed. The previously made choledochogastric stoma was disconnected and the common bile duct was anastomosed to the jejunum. The remaining portion of the pancreas appeared normal.

CASE 6.—The patient, a man aged 41 years, complained that he had lost 30 pounds (13.6 Kg.) in ten months and had had diarrhea for three months and jaundice for one month. Resection of the head of the pancreas, the distal 5 cm. of the stomach and 20 cm. of the duodenum and jejunum was performed on May 22, 1945. The pathologic diagnosis was adenocarcinoma, grade 2 (5 by 4 by 3 cm.), of the head of the pancreas. Intake-excretion studies were carried out one month after operation. He was having two or three bowel movements a day. He made no complaints concerning his abdomen. His weight at the time of the study was 134 pounds (60.8 Kg.), whereas his usual weight prior to his illness had been 170 pounds (77.1 Kg.). After this study, the patient gained weight to 170 pounds (77.1 Kg.), taking two pancreatin tablets (5 grains [0.3 Gm.] each) before meals. In February 1947, a letter from him stated that he was in fairly good health, weighed 160 pounds (72.6 Kg.) and passed loose light-colored stools. He was able to do sedentary work. He had continued to take pancreatin.

CASE 7.—The patient, a man aged 48 years, complained that he had had recurring episodes of anemia for one year. The anemia responded readily to administration of iron. Resection of the head of the pancreas, the distal 5 cm. of the stomach and 15 cm. of the duodenum was performed on May 29, 1945. The pathologic diagnosis was adenocarcinoma, grade 1 (8 by 5 by 2 cm.), of the duodenum. Intake-excretion studies were carried out (tables 1 and 2, patient 7, period 1), two months after operation. The patient made no complaints referable to the abdomen. He was having one bowel movement per day. His weight was 146 pounds (66.2 Kg.) as compared to his usual weight of 175 pounds (79.4 Kg.) before his illness.

After this study the patient's weight increased to 153 pounds (69.4 Kg.) without pancreatin. He returned to the clinic in June 1946, complaining of recurring attacks of epigastric pain, fever, chills and jaundice. Abdominal exploration was carried out on June 26, 1946. The cholecystogastric stoma was not functioning because the cystic duct was obstructed by an extrinsic inflammatory mass. A fistula had formed between the lower end of the common duct and the duodenum. The cholecystogastric stoma was disconnected, the gallbladder was removed and the common bile duct was anastomosed to the jejunum. A diagram of the upper part of the gastrointestinal tract after this operation is essentially the same as that represented in figure 2 for patient 9. Intake-excretion studies were carried out four weeks after this operation (tables 1 and 2, patient 7, period 2). The patient weighed 143 pounds (64.9 Kg.). He was having no abdominal symptoms. His bowels moved once each day. When last heard from, in March 1947, he was in good health.

CASE 8.—The patient, a woman aged 51 years, complained that she had had epigastric pain, anorexia and loss of weight for six months. Resection of the head of the pancreas, the distal 10 cm. of the stomach and 15 cm. of the duodenum was carried out on Sept. 7, 1945. The pathologic diagnosis was adenocarcinoma, grade 2 (3 by 2 by 1 cm.), of the ampulla of Vater. Intake-excretion studies were carried out three weeks after operation. The patient was having three to five bowel movements a day, but she had no other complaints. Her weight was 119 pounds (54.0 Kg.), as compared with a usual weight of 145 pounds (65.8 Kg.) before her illness. The patient did well for five months after study

TABLE 1.—*Average Daily Values for Fecal Total Solids and Fat With and Without Pancreatin After Resection of Head of Pancreas* ★

Patient	Period	Length of Period, Days	Total Solids Without Pancreatin, Gm.	Total Solids With Pancreatin, Gm.	Total Solids Percentage Change	Fat Without Pancreatin Gm.	Fat With Pancreatin, Gm.	Fat Percentage Change	Fat, per Cent of Ingested Fat Without Pancreatin	Fat, per Cent of Ingested Fat With Pancreatin	Fat, per Cent of Ingested Fat Percentage Change	Fat, Percentage Total Fecal Solids Without Pancreatin	Fat, Percentage Total Fecal Solids With Pancreatin †	Fat, Percentage Total Fecal Solids Percentage Change
						Patients Studied With and Without Pancreatin								
1	1	12	118.0			66.1			65.1			56.0		
	2	10		70.1	40.6		29.2	-55.8		28.7	-55.9		41.7	-25.5
2	1	6	139.1			66.3			65.3			47.7		
	2	6		60.0	-56.9		27.6	-58.4		27.2	-58.3		45.0	- 4.6
3	1	6	107.6			56.3			55.4			52.3		
	2	6		96.3	-10.5		40.7	-27.7		40.1	-27 6		42.3	-19.1
4	1	6	114.1			50.9			50.1			44.6		
	2	6		88.8	-22.2		32.3	-36.5		31.8	-36.5		36.4	-18.3
	3	6		58.3	-48.9		20.1	-60.5		19.8	-60.5		34.5	-22.6
	Average		119.7	78.8	-32.0	59.9	32.5	-44.6	59.0	32.0	-44.6	50.2	41.4	-16.8
						Patients Studied Without Pancreatin								
5	1	6	125.6			66.3			65.2			52.8		
6	1	6	104.0			59.2			58.3			56.9		
7	1	6	66.1			38.8			38.2			58.7		
	2	3	39.2			14.9			14.7			38.0		
8	1	6	103.9			36.7			35.1			34.4		
9	1	6	82.9			26.9			26.5			32.4		
10	1	6	42.7			17.4			17.1			40.7		
	2	3	45.0			16.5			16.2			36.7		
	Average (all 10 patients)		100.4			48.4			47.6			48.2		
	Controls, average		27.6			4.1			4.0			14.8		

*All subjects were taking a test diet containing 101.6 Gm. fat and 117.5 Gm. protein per day.

† 15 Gm. pancreatin in enteric-coated tablets was administered daily except in period 3 of patient 4, in which 15 Gm. powdered pancreatin in tomato juice was administered daily.

‡ Period 3 of patient 4, period 2 of patient 7 and period 2 of patient 10 are not included in the averages.

and then began to have pain in the right upper part of the abdomen. She died from abdominal carcinomatosis in December 1946.

CASE 9.—The patient, a man aged 64 years, complained that he had had diarrhea for four months, epigastric pain for six weeks and loss of weight for five months. He stated that two months before he came to the clinic choledochostomy with T tube drainage had been carried out because of jaundice of three weeks' duration. Resection of the head of the pancreas, the distal 9 cm. of the stomach and 15 cm. of the duodenum was performed on Aug. 29, 1945. The pathologic diagnosis was mucous adenocarcinoma, grade 1 (3 by 3 by 3 cm.), of the head of the pancreas. Intake-excretion studies were carried out three weeks after operation. He was having two to four bowel movements each day, but he had no other complaints referable to his abdomen. His weight was 106 pounds (48.1 Kg.) as compared to a usual weight of 145 pounds (65.8 Kg.) before the onset of his illness.

After this study the patient did well for four months, gaining weight to 135 pounds (61.2 Kg.). In January 1946, he began to have abdominal pain, and in March 1946 he died of a recurring malignant lesion.

CASE 10.—The patient, a man aged 58 years, complained that he had had abdominal pain for ten months and jaundice for four months. His body weight had decreased from 206 pounds (93.4 Kg.) to 134 pounds (60.8 Kg.) in this time. Preliminary cholecystogastrostomy was performed on Dec. 16, 1944. Resection of the head of the pancreas, 8 cm. of the distal portion of the stomach and 16 cm. of the duodenum and jejunum was performed on Feb. 2, 1945. The pathologic diagnosis was adenocarcinoma, grade 1, of the head of the pancreas. Intake-excretion studies were carried out three weeks after the second operation (tables 1 and 2, patient 10, period 1). The patient made no complaints. He was having two formed stools a day. His weight was 143 pounds (64.9 Kg.).

After this study the patient did well, his weight increasing to 152 pounds (68.9 Kg.) six months after operation. In February 1946, he returned complaining of loss of 20 pounds (9.1 kg.) and pain in the upper part of the abdomen for one month. He was having two normal stools a day. Intake-excretion studies were carried out (tables 1 and 2, patient 10, period 2). Shortly thereafter, abdomi-

TABLE 2 - *Average Daily Values for Nitrogen in the Feces and Urine and the Nitrogen Balances With and Without Pancreatin After Resection of the Head of Pancreas* *

				Fecal Nitrogen			Urinary Nitrogen			Total Nitrogen Loss		Nitrogen Balance		Per Cent of Nitrogen Intake Lost in Feces	
Patient	Period	Length of Period, Days	Total Nitrogen Intake, Gm.†	Without Pancreatin, Gm.	With Pancreatin‡ Gm.	Percentage Change	Without Pancreatin, Gm.	With Pancreatin‡ Gm.	Percentage Change	Without Pancreatin, Gm.	With Pancreatin‡ Gm.	Without Pancreatin, Gm.	With Pancreatin‡, Gm.	Without Pancreatin	With Pancreatin‡
				*Patients Studied with and Without Pancreatin											
1	1	12	18.9	6.8			8.6			15.4		+3.5		36.0	
	2	10	20.6		3.0	-55.9		11.3	+31.4		14.3		+6.3		14.6
2	1	6	18.9	9.3			6.3			16.1		+2.8		49.2	
	2	6	20.6		2.4	-74.2		15.9	+133.8		18.3		+2.3		11.7
3	1	6	18.9	6.8			8.5			15.3		+3.6		36.0	
	2	6	20.6		4.1	-39.7		8.9	+4.7		13.0		+7.6		19.9
4	1	6	18.9	7.6			7.6			15.2		+3.7		40.2	
	2	6	20.6		4.3	-43.4		11.9	+56.6		16.2		+4.4		20.9
	3	6	20.5		3.2	-57.9		14.1	+85.5		17.3		+3.2		15.6
Average				7.6	3.5	-53.4	7.9	12.0	+56.6	15.5	15.7	+3.4	+5.2	40.4	16.5
				Patients Studied Without Pancreatin											
5	1	6	18.9	8.6			8.7			17.3		+1.6		45.5	
6	1	6	18.9	7.9			8.2			16.1		+2.8		41.8	
7	1	6	18.9	3.2			11.5			14.7		+4.2		16.9	
	2	3	18.9	2.5			15.0			17.5		+1.4		13.2	
8	1	6	18.9	9.2			6.0			15.2		+3.7		48.7	
9	1	6	18.9	6.6			7.9			14.5		+4.4		34.9	
10	1	6	18.9	2.5			12.0			14.5		+4.4		13.2	
	2	3	18.9	4.1			13.2			17.3		+1.6		21.7	
Average of (all 10 patients)				6.8			8.5			16.3		+3.6		36.2	
Controls, average				1.7										8.8	

* All subjects were taking a test diet containing 101.6 Gm. fat and 117.5 Gm. protein (18.9 Gm. nitrogen) per day.

† Intakes of nitrogen of more than 18.9 Gm. per day were due to nitrogen contained in pancreatin.

‡ Fifteen grams pancreatin in enteric-coated tablets was administered daily except in period 3, patient 4, in which 15 Gm. powdered pancreatin in tomato juice was administered daily.

§ Period 3 of patient 4, period 2 of patient 7 and period 2 of patient 10 are not included in the averages.

nal exploration revealed recurring carcinoma. The patient died in January 1947.

DIETS

Four different test diets were employed in this study, the compositions of which have been summarized in table 3. They consisted of bland, easily digestible foods, low in bulk, which were served in three meals supplemented by several smaller between meal feedings each day. All food was weighed. The fat and protein (nitrogen x 6.25) content of diets 1 and 4 were determined by three separate analyses of these diets. Except for these analyzed values the content of carbohydrate, fat and protein of the four diets was calculated from standard tables. A detailed description of diets 2 and 3

has been presented elsewhere.[1] Diets 1, 2 and 3 differed from each other mainly in their fat and carbohydrate content, since the amount of protein and the number of calories in them were not greatly different. They represented a diet of low fat content, a diet of moderate fat content and a diet of high fat content respectively. Diets 2 and 4 differed from each other mainly in their protein and carbohydrate content, since the amount of fat and the number of calories in them were practically the same. They represented a diet of high protein content and a diet of low protein content respectively.

TABLE 3.—*Approximate Composition of Test Diets Per Day*

Diet	Fat, Gm.	Protein, Gm.	Carbohydrate, Gm.	Calories
1	44	123	379	2,405
2	102	118	270	2,463
3	208	98	141	2,823
4	106	61	325	2,497

In order to reduce the tedium of diets when given over long periods of study, three daily menus were arranged for diets 1, 2 and 4 and were fed in a constant order of rotation. Diet 3 was fed over a three day period of study to only 1 patient. The menu of this diet did not vary from one day to the next. In all studies, it was required that all food be eaten.

Miss Lida Burrill, Chief Dietitian, Nutrition Laboratory, St. Marys Hospital, planned and supervised the diets used in this study.

PROCEDURE AND LABORATORY METHODS

The procedures and laboratory methods were the same as those previously employed, which have been described in detail.[1b] All studies were carried out in the Metabolic Study Unit at St. Marys Hospital. With few exceptions the periods of study were six days in length. Collections of stools were made with the help of carmine markers. The subjects ate the test diet during the two days prior to the administration of the first marker and remained on the diet until the second marker appeared in the stool. Feces were analyzed for total solids, fat (total lipid) and nitrogen. All urine passed during the periods of study was collected and analyzed for nitrogen.

The following intake-excretion studies were carried out:

1. Each patient in the entire group of 10 patients was studied with the moderately high fat test diet (diet 2), which had previously been used for the study of 11 normal subjects. A direct measure was thereby obtained of the degree of functional impairment of the gastrointestinal tract after resection of the head of the pancreas. Furthermore, this study made possible a comparison between cases in which the external secretion of the pancreas was prevented from entering the gastrointestinal tract (cases 1, 2 and 3) and those in which an attempt was made to establish a flow of pancreatic juice into the gastrointestinal tract by anastomosing the remaining portion of the pancreas to the stomach (case 4) or to the jejunum (cases 5, 6, 7, 8, 9 and 10).

2. With the same test diet, 4 patients with pronounced impairment of gastrointestinal function (cases 1, 2, 3 and 4) were studied while they were taking pancreatin in doses of fifteen enteric-coated tablets with each of three meals per day.[2] A direct comparison of results with and without pancreatin while the patients were taking the identical diet was therefore possible. One patient (case 4) was also studied while taking 5 Gm. of powdered pancreatin in tomato juice with each of three meals a day. This patient was found to have no free hydrochloric acid in the gastric contents after an Ewald test meal.

3. Five patients (cases 1, 2, 5, 6 and 9) were studied on a low fat diet (diet 1) and one patient (case 6) was in addition studied on a high fat diet (diet 3). With the results obtained from studies on the moderately high fat diet (diet 2), it was thereby possible to compare fecal total solids, fat and nitrogen at three levels of fat intake.

Four patients (cases 1, 6, 8 and 9) were studied on a low protein diet (diet 4). With the results obtained from studies on a high protein diet (diet 2), it was thereby possible to compare fecal losses of total solids, fat and nitrogen at two levels of protein intake.

No control studies of normal subjects have have been carried out with the low fat or low protein diets (diets 1 and 4), but control studies with the high fat test diet (diet 3) and the moderately high fat test diet (diet 2) have previously been published.[1]

RESULTS

In tables 1 and 2 are summarized the results of all studies in which the moderately high fat diet (diet 2) was employed with and without pancreatin. Table 1 is concerned with fecal total solids and fat, while table 2 is concerned with fecal and urinary nitrogen and the nitrogen balance. For the sake of comparision, the average fecal values obtained from the study of a series of normal persons on the same test diet were included at the bottom of these tables.

The degree of impairment of gastrointestinal function was considerable. The average amount of total fecal solids among all 10 patients when not taking pancreatin was 100.4 Gm. per day as compared to an average of 27.6 Gm. per day among the 11 control subjects. The 10 patients lost on an average of 48.4 Gm. of

1. *(a)* Wollaeger, E. E.; Comfort, M. W., and Osterberg, A. E.: Total Solids, Fat and Nitrogen in the Feces: III. A Study of Normal Persons Taking a Test Diet Containing a Moderate Amount of Fat; Comparison with Results Obtained with Normal Persons Taking a Test Diet Containing a Large Amount of Fat, Gastroenterology 9: 272-283 (Sept.) 1947. (b) Wollaeger, E. E.; Comfort, M. W.; Weir, J. F., and Osterberg, A. E.: The Total Solids, Fat and Nitrogen in the Feces: I. A. Study of Normal Persons and of Patients with Duodenal Ulcer and a Test Diet Containing Large Amounts of Fat, ibid., 6:83-92 (Feb.) 1946.

2. Wilson Laboratories, Chicago. Each tablet contained 5 grains (0.3 Gm.) pancreatin.

fat per day, or 47.6 per cent of the fat ingested. The control subjects, on the other hand, lost an average of only 4.1 Gm. of fat per day, or 4.0 per cent of the fat ingested. Fat constituted a higher percentage of the total fecal solids among the 10 patients than it did among the controls—an average of 48.2 per cent as compared to an average of 14.8 per cent. Fecal nitrogen averaged 6.8 Gm. per day among the patients and constituted 36.2 per cent of the nitrogen intake. Among the control subjects fecal nitrogen averaged 1.7 Gm. per day and constituted 8.8 per cent of the ingested nitrogen.

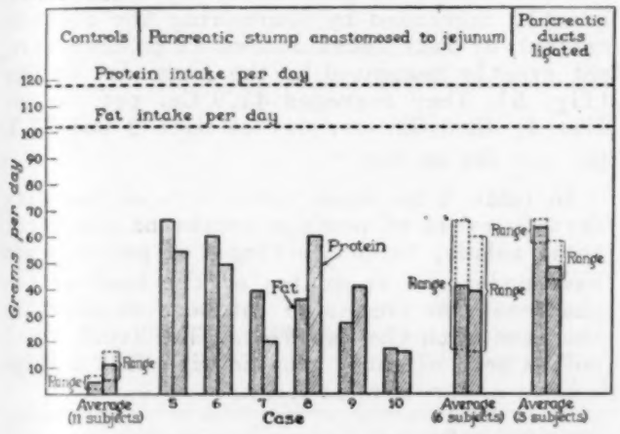

Fig. 3—Fecal losses of fat and protein (nitrogen times 6.25) after resection of the head of the pancreas. Effect of anastomosing the stump of the pancreas to the jejunum. All subjects were taking a test diet containing 101.6 Gm. of fat and 117.5 Gm. of protein per day.

Figure 3 compares the fecal losses of fat and protein among 3 patients whose pancreatic ducts had been ligated (cases 1, 2 and 3) with fecal losses of fat and protein among 6 patients (cases 5, 6, 7, 8, 9 and 10) in whom the the remaining pancreas had been anastomosed to the jejunum. For convenience fecal nitrogen values have been multiplied by 6.25 and expressed as protein. The three patients whose ducts had been ligated lost in the feces on an average 63 of the 102 Gm. of fat and 48 of the 118 Gm. of protein ingested per day. The range of loss of both fat and protein was not wide. Among the 6 subjects in whom the remaining portion of the pancreas had been anastomosed to the jejunum, on the other hand, the fecal losses of fat and protein varied a good deal. They ranged from values equal to those of the patients whose pancreatic ducts had been ligated to values only slightly above normal.

The effect of the oral administration of pancreatin on the fecal fat and protein (nitrogen x 6.25) of 4 patients is shown in figure 4. In every instance fecal losses of fat and protein were definitely and substantially reduced by administration of pancreatin. In the case of fat the average reduction was 44.6 per cent and in the case of protein it was 53.4 per cent. Without pancreatin the average loss of fat was 59.9 Gm. per day; with pancreatin it was 32.5 Gm. Without pancreatin the average loss of protein was 47.5 Gm. per day; with pancreatin it was 21.9 Gm. The ranges of loss of fat and protein when pancreatin was administered did not overlap the ranges of loss when none was given.

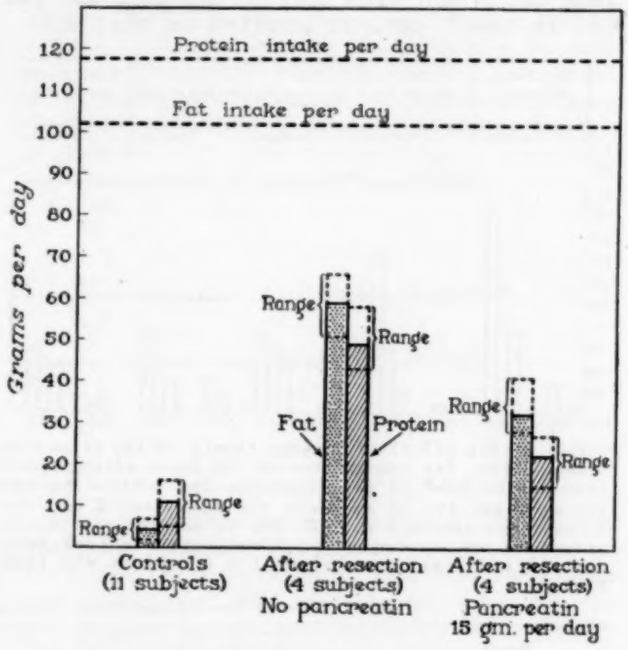

Fig. 4—Fecal losses of fat and protein (nitrogen times 6.25) after resection of the head of the pancreas. Effect of pancreatin. All subjects were taking a test diet containing 102 Gm. of fat and 118 Gm. of protein per day.

An examination of table 1 reveals that pancreatin effected an average reduction in total fecal solids from 119.7 Gm. per day to 78.8 Gm. per day. This constituted a reduction of 32.6 per cent. The percentage of the total fecal solids which was fat was reduced only 16.8 per cent by pancreatin. This indicates an almost parallel reduction of the fatty and nonfatty solid constituents of the feces. In terms of percentage of ingested fat lost in the feces, pancreatin reduced fecal fat losses from 59.0 per cent to 32.0 per cent.

A further evidence of the value of pancreatin in improving the function of the gastrointestinal tract was obtained from studying the values for urinary nitrogen (table 2). Without pancreatin the average urinary excretion of nitrogen was 7.9 Gm. per day. With pancreatin it was 12.0 Gm. per day. Although the nitrogen content of pancreatin (1.6 Gm. in the daily dose) increased the nitrogen intake during the periods in which pancreatin was being administered, this did not explain the entire increase of urinary excretion of nitrogen during these periods. Some of this increase was no doubt due to improved assimilation of nitrogen from the gastrointestinal tract.

The effect of three different levels of fat intake on the fecal total solids, fat and nitrogen is shown in table 4 and in figure 5. (In figure 5 fecal nitrogen values have been multiplied by 6.25 and expressed as fecal pro-

tein.) When the fat content of the diet was increased there was a pronounced rise in the fat content of the feces, which was accompanied by a corresponding rise in the total fecal solids. With diet 1, the average loss of fat was 21.9 Gm. per day. With diet 2, the average loss was 57 Gm. With diet 3, the loss was 146 Gm. in the 1 patient studied on this diet.

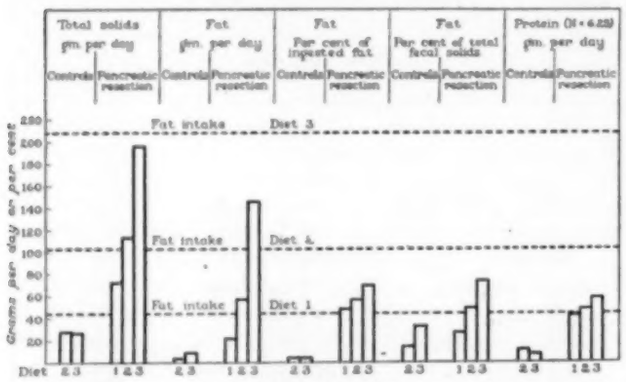

Fig. 5—The effect of various levels of fat intake on total solids, fat and protein in the feces after resection of the head of the pancreas. The control values are averages for 11 subjects who took diet 2 and for 13 subjects who took diet 3. The values for pancreatic resection are averages for 5 subjects who took both diets 1 and 2 and the values for 1 subject who took diet 3.

Somewhat similar results were observed in the control studies with diets 2 and 3. Among these normal subjects doubling the fat intake per day resulted in a doubling of the fecal fat loss, so that there was no difference in the percentage of ingested fat lost in the feces with the two diets. The percentage of fat in the total fecal solids, on the other hand, was considerably greater with the high fat diet than with the moderately high fat diet.[1a]

Although fecal losses of fat among patients who had undergone pancreatic resection were greatly increased by increasing the dietary content of fat, fecal losses of protein were not greatly augmented by the large fat losses (fig. 5). They averaged 41.9 Gm. per day on diet 1, 48.8 Gm. per day on diet 2 and 57.5 Gm. per day on diet 3.

In table 5 is shown the effect of two different levels of protein intake on the fecal total solids, fat and nitrogen of patients who have undergone resection of the head of the pancreas. The losses of fat were essentially the same with the two diets. The fecal total solids were slightly greater with diet 2 (high

TABLE 4.—*Effect of Three Different Levels of Fat Intake on the Total Solids, Fat and Nitrogen in the Feces*

Patient	Length of Period, Days	Loss in Feces per Day: Total Solids, Gm. Diet 1	Diet 2	Diet 3	Fat, Gm. Diet 1	Diet 2	Diet 3	Fat, Percentage of Ingested Fat Diet 1	Diet 2	Diet 3	Fat, Percentage Total Fecal Solids Diet 1	Diet 2	Diet 3	Nitrogen, Gm. Diet 1	Diet 2	Diet 3
8	12	82.7			28.9			66.3			34.9			7.1		
	12		118.0			66.1			65.1			56.0			6.8	
2	6	51.1			22.3			51.1			43.6			6.2		
	6		139.1			66.3			65.3			47.7			9.3	
5	6	80.4			24.1			55.3			30.0			7.5		
	6		125.6			66.3			65.2			52.8			8.6	
6	6	79.0			24.0			55.0			30.4			7.4		
	6		104.0			59.2			58.3			56.9			7.9	
	3			196			146			70.2			74.5			9.2
9	6	63.2			6.8			15.6			10.8			5.2		
	6		82.9			26.9			26.5			32.4			6.6	
Average		71.3	113.9	196	21.2	57.0	146	48.7	56.1	70.2	29.9	49.2	74.5	6.7	7.8	9.2

This was in contrast to the results with normal subjects, in whom a loss of fat of 4.1 Gm. per day on the moderately high fat test diet (diet 2) was increased to only 8.7 Gm. per day when the high fat test diet (diet 3) was given.[1a]

Among patients who had undergone resection of the head of the pancreas, an increase in the dietary intake of fat was accompanied by a slightly more than corresponding increase in the amount of fecal fat. Consequently the percentage of ingested fat lost in the feces was only slightly increased (48.7 per cent with diet 1, 56.1 per cent with diet 2 and 70.2 per cent with diet 3). On the other hand the percentage of fat in the total fecal solids was substantially increased (29.9 per cent with diet 1, 49.2 per cent with diet 2 and 74.5 per cent with diet 3).

protein) than with diet 4 (low protein). However, the major difference in the results from the two diets was found in the nitrogen content of the stools. With the high protein diet the fecal nitrogen averaged 7.6 Gm. per day and with the low protein diet it averaged 4.7 Gm. per day. In other words, a high level of protein intake resulted in a greater loss of protein in the feces than did a low level of intake. Figure 6 demonstrates that an increase in the amount of fat or protein in the diet resulted in an increase in the quantities of fat or protein absorbed in spite of a great wastage in the feces. With diets 1, 2 and 3, 22.8, 44.6 and 62.0 Gm. of fat per day were absorbed respectively. With diets 4 and 2,

31.6 and 70 Gm. of protein were absorbed respectively.

In table 2 are presented the nitrogen balances of all 10 patients while taking diet 2 both with and without pancreatin. In every case the balances were positive, even when fecal losses of nitrogen were large. With pancreatin the average retention of nitrogen was greater than without it, though there were individual instances in which this was not the case. Table 6 presents the nitrogen balances of patients who were studied at more than one level of fat or protein intake. With the exception of 1 patient (case 1) who was taking the low protein diet (diet 4), all nitrogen balances were positive. In general nitrogen retention was less on the low protein diet (diet 4) than on the other three diets, in which the protein content was relatively high. Our results with regard to nitrogen balances are in agreement with those of Nasset, Pierce and Murlin,[3] who showed that depancreatized dogs may have increased nitrogen retention or normal balances even when large amounts of nitrogen are lost in the feces.

TABLE 5.—*Effect of Two Different Levels of Nitrogen Intake on the Total Solids, Fat and Nitrogen in the Feces per Day*

Patient	Length of Period, Days	Loss in Feces per day: Total Solids, Gm.		Fat, Gm.		Fat, Percentage of Ingested Fat		Fat, Percentage of Total Fecal Solids		Nitrogen, Gm.	
		Diet 2	Diet 4	Diet 2	Diet 4	Diet 2	Diet 4	Diet 2	Diet 4	Diet 2	Diet 4
1	12	118.0		66.1		65.1		56.0		6.8	
	12		105.5		54.9		52.0		52.0		6.2
6	6	104.0		59.2		58.3		56.8		7.9	
	6		103.0		70.4		66.7		68.3		5.2
8	6	104.0		35.7		35.1		34.3		9.2	
	6		61.0		25.3		24.0		41.5		3.6
9	6	82.9		26.9		26.5		32.4		6.6	
	6		69.1		29.5		28.0		42.7		3.8
Average		102.2	84.6	47.0	45.0	46.3	42.7	45.0	51.1	7.6	4.7

COMMENT.

Among the 10 patients who were studied, there was considerable variation in the degree of impairment of the digestive and absorptive functions of the gastrointestinal tract. Similar variation can be found in the results of previously published intake-excretion studies of patients who have undergone resection of the head of the pancreas.[4] The cause of such variation is not entirely clear, but a good part of it probably represents differences in the amount and quality of the external pancreatic secretion which reaches the gastrointestinal tract. All 3 of our patients in whom the pancreatic ducts were ligated lost large amounts of fat and nitrogen in the feces. There was little difference in the degree of such loss among them. In patients whose pancreas had been anastomosed to the jejunum, on the other hand, the losses ranged from values equal to those of patients whose pancreatic ducts had been ligated to values only slightly above normal. It seems likely that, in some patients, damage to pancreatic tissue had been so extensive as a result of previous obstruction of the pancreatic duct or pancreatitis that little functioning acinar tissue remained. Anastomosis of such a pancreas to the jejunum would not improve digestion or absorption.

Aside from differences in pancreatic secretion, there are other poorly understood factors which influence the absorption of food from the gastrointestinal tract after resection of the head of the pancreas. Partial gastrectomy alone (when the stomach has been anastomosed to the jejunum) was followed by excessive loss of fat and sometimes of nitrogen in the feces.[5] The degree of these losses

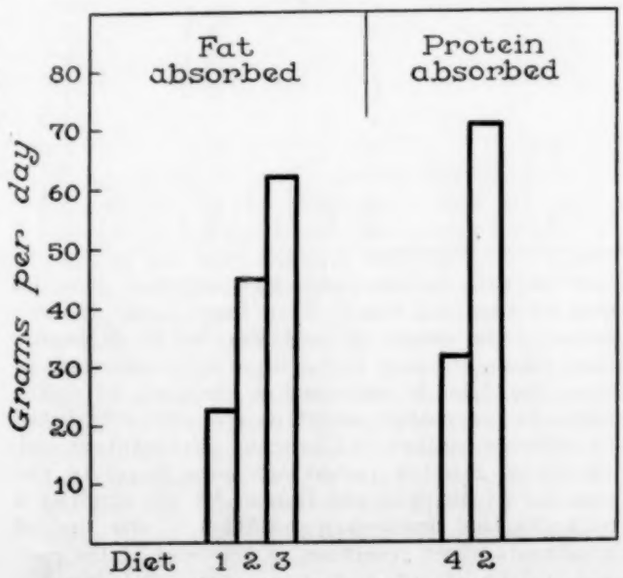

Fig. 6—The effect of various levels of fat and protein intake on the quantity of fat and protein (nitrogen times 6.25) absorbed after resection of the head of the pancreas. The values for fat absorbed are averages for 5 subjects who took both diets 1 and 2 and the value for 1 subject who took diet 3. The values for protein absorbed are averages for 4 subjects who took both diets 2 and 4.

3. Nasset, E. S.; Pierce, H. B., and Murlin, J. R.: The Influence of Yeast on Protein Metabolism in Normal and Depancreatized Dogs, J. Lab. & Clin. Med. 16:1151-1168 (Sept.) 1931.

4. *(a)* Whipple, A. O., and Bauman, L.: Observations on Pathologic Physiology of Insular and External Secretory Functions of Human Pancreas. Am. J. M. Sc. 201:629-636 (May) 1941. *(b)* Brunschwig, A., and Allen, J. G.: Occlusion of External Pancreatic Secretion in Man, Proc. Soc. Exper. Biol. & Med. 53:43-47 (May) 1943. *(c)* Lake, M.; Cornell, N. W., and Harrison, H. E.: Post-Operative Achylia Pancreatica: Fat and Protein Absorption With and Without Replacement Therapy; Report of a Case, Am. J. M. Sc. 205:118-122 (Jan.) 1943. *(d)* Rekers, P. E.; Pack, G. T., and Rhoads, C. P.: Metabolic Studies in Patients with Cancer of the Gastrointestinal Tract: V. Pancreatic Insufficiency in a Patient Treated Surgically for Carcinoma of the Ampulla of Vater, J. A. M. A. 122:1243-1245 (Aug. 28) 1943.

5. Wollaeger, E. E.; Comfort, M. W.; Wier, J. F., and Osterberg, A. E.: The Total Solids, Fat and Nitrogen in the Feces: II. A Study of Persons who had Undergone Partial Gastrectomy with Anastomosis of the Entire Cut End of the Stomach and the Jejunum (Polya Anastomosis), Gastroenterology 6:93-104 (Feb.) 1946.

varied from patient to patient but was not of the same order of magnitude as that found when resection of the head of the pancreas and the duodenum had also been done. There was no reason to believe that the pancreas was abnormal in the patients who had undergone partial gastrectomy alone. It seemed unlikely, therefore, that difference in pancreatic secretion was responsible for the variations in fecal fat and nitrogen found. Since partial gastrectomy with gastrojejunostomy was carried out in all patients who underwent resection of the head of the pancreas, this part of the operation alone must have been responsible for some of the excess fecal loss of fat and nitrogen sustained by these patients. By the same token, it could also have been responsible for some of the variation in the losses among them.

Handelsman, Golden and Pratt[6] studied absorption of food by 3 dogs in which special precautions had been taken to exclude pancreatic secretion from the gastrointestinal tract. They found large differences in the amount of food absorbed by different dogs taking the same diet. These differences obviously could not be explained on the basis of variations in pancreatic secretion and were attributed to unknown factors influencing gastrointestinal function. Similar variations were found in the results of Whipple and Bauman,[4a] who studied 4 patients, and Brunschwig and Allen,[4b] who studied 3 patients after resection of the head of the pancreas with occlusion of the pancreatic ducts. Two patients in the first group and 1 in the second group were found to have approximately normal fecal losses of fat and nitrogen. The other patients in the two groups sustained relatively large losses.

In contrast to these findings, all 3 of our patients in whom the pancreatic ducts had been ligated lost large amounts of fat and nitrogen in the feces when they ingested the same test diet. There was little difference in the degree of loss among them. This discrepancy between our results on the one hand and those of Handelsman, Golden and Pratt,[6] Whipple and Bauman,[4a] and Brunschwig and Allen[4b] on the other is not easily explained. Perhaps if we had carried out a greater number of studies with patients whose pancreatic ducts had been ligated, a much greater variation in results would have been found. On the other hand, consideration must be given to the fact that fistulous connections between the pancreas and the gastrointestinal tract of dogs have frequently occurred even after ligation of the pancreatic ducts.[7] Apparently, no such fistulous connections were demonstrated in the animals of Handelsman, Golden and Pratt at the time of necropsy. However, the possibility of formation of fistula was not entirely ruled out in the 2 patients of Whipple and Bauman and the 1 patient of Brunschwig and Allen who were shown to have relatively normal fecal losses of fat and nitrogen. The results of Coffey, Mann and Bollman[8] with dogs indicate that the secretions from only a small amount of pancreatic tissue may be adequate to maintain practically normal digestion and absorption. It is possible that pancreatoenteric fistulas formed in some of our patients whose pancreatic ducts had been ligated. However, the degree of fecal loss of fat and protein in these patients, which was similar to that of patients who had undergone total pancreatectomy,[9] makes it seem improbable that pancreatic juice was entering the gastrointestinal tract.

The study of fecal losses of fat at various levels of fat intake revealed that (1) fecal losses of fat increased as the fat content of the diet increased; (2) in spite of great wastage in the feces the actual amount of fat absorbed was in-

TABLE 6.—*Effect of Various Levels of Fat and Protein Intake on Nitrogen Balance After Resection of Head of Pancreas*

Patient	Diet	Intake	Loss Urine	Loss Feces	Loss Total	Nitrogen, Gm. per Day Balance
1	1	19.7	9.4	7.1	16.5	+3.2
	2	18.9	8.6	6.8	15.4	+3.5
	4	9.7	4.2	6.1	10.3	-0.6
2	1	19.7	8.8	6.2	17.0	+2.7
	2	18.9	6.8	9.3	16.1	+2.8
5	1	19.7	9.1	7.5	17.6	+2.1
	2	18.9	8.7	8.6	17.3	+1.6
6	1	19.7	9.7	7.4	17.1	+2.6
	2	18.9	8.2	7.9	16.1	+2.8
	3	15.7	3.2	9.2	12.4	+3.3
	4	9.7	4.3	5.2	9.5	+0.2
8	2	18.9	6.0	9.2	15.2	+3.7
	4	9.7	3.7	3.6	7.3	+2.4
9	1	19.7	8.6	5.2	13.8	+5.9
	2	18.9	7.9	6.6	14.5	+4.4
	4	9.7	4.5	3.8	8.3	+1.4

6. Handelsman, M. B.; Golden, L. A., and Pratt, J. H.: The Effect of Variations in the Diet on the Absorption of Food in the Absence of Pancreatic Digestion, J. Nutrition 8:479-495 (Oct.) 1934.

7. Pratt, J. H.; Lamson, P. D., and Marks, H. K.: The Effect of Excluding Pancreatic Juice from the Intestine, Tr. A. Am. Physician 24:266-279, 1909. Handelsman, M. B.: Digestive and Absorptive Function of External Secretion of Pancreas, Ann. Int. Med., 11:1479-1497 (Feb.) 1938.

8. Coffey, R. J.; Mann, F. C., and Bollman, J. L.: III. The Influence of the Pancreas on the Utilization of Foodstuffs. Am. J. Digest. Dis. 7:144-149 (April) 1940.

9. (a) Priestly, J. T., Comfort, M. W., and Radcliffe, J., Jr.: Total Pancreatectomy for Hyperinsulinism Due to Islet-Cell Adenoma: Survival and Cure at Sixteen Months After Operation; Presentation of Metabolic Studies. Ann. Surg. 119:211 (Feb.) 1944. (b) Dixon, C. F.; Comfort, M. W.; Lichtman, A. L., and Benson, H. E.: Total Pancreatectomy for Carcinoma of the Pancreas in a Diabetic Person: Metabolic Studies, Arch. Surg. 52:619-639 (June) 1946.

creased by increasing the fat content of the diet, and (3) the efficiency of the gastrointestinal tract decreased as the fat content of the diet was raised. Thus, despite the fact that the actual amount of fat absorbed was larger with the higher fat diets, the average percentage of ingested fat absorbed dropped from 51 per cent with diet 1 to 44 per cent with diet 2 and 30 per cent with diet 3. Similar results were reported by Handelsman, Golden and Pratt with dogs. When patients who have undergone resection of the head of the pancreas are fed diets of high fat content, they often have more frequent and copious bowel movements and experience a greater degree of abdominal discomfort than when their diet is low in fat. Because they have such a poor tolerance for fat and assimilate it so inefficiently, we have usually advised these patients to limit the fat content of their diets to between 50 and 75 Gm. per day.

The results of the study of fecal protein losses at two levels of protein intake revealed that: (1) fecal losses of protein increased as the protein content of the diet increased; (2) in spite of great wastage in the feces, the actual amount of protein absorbed was increased by increasing the protein content of the diet. The results with protein differed from the results with fat in that gastrointestinal efficiency did not diminish as protein intake was increased but on the contrary was somewhat better with the high protein intake than it was with the low. With diet 2 (high protein) an average of approximately 60 per cent of ingested protein was absorbed, while with diet 4 (low protein) approximately 51 per cent of ingested protein was absorbed. Furthermore, the nitrogen balance studies revealed a greater retention of nitrogen with the high protein diet than with the low protein diet. Since large amounts of dietary protein are well tolerated by patients who have undergone resection of the head of the pancreas, we have prescribed for them diets containing from 120 to 140 Gm. of protein per day. Large amounts of carbohydrates are also well tolerated by these patients and can be taken in sufficient quantities to bring the total calories in the diet to 3,000 or more per day.

The beneficial effects of pancreatin on the absorption of fat and protein in human subjects who are suffering from an insufficiency of the external pancreatic secretion seem well established.[10] They are well demonstrated by the fact that fecal losses of fat and protein were reduced by approximately 50 per cent in the four subjects whom we studied.

From a nutritional point of view our 10 patients did surprisingly well, considering the large caloric losses in the feces which some of them sustained. By taking bland diets high in calories, protein and carbohydrate and low in fat, and by taking pancreatin if impairment of gastrointestinal function was great, they were able to gain weight or maintain a satisfactory weight level in almost every instance. In table 7 is presented the customary weight of each patient before illness, the weight at the time of our study and the weight at some later time indicated in the table. Diarrhea was a handicap in only 2 cases (cases 4 and 5). At the present time, two to three years after operation, 7 of the 10 patients are living and 4 of them (cases 2, 3, 6 and 7) are in good health.

We had the opportunity of repeating intake-excretion studies after the lapse of an interval of time with only 2 of our patients. Patients 7 and 10 were each reexamined with diet 2 a year after their initial studies had been carried out (tables 1 and 2, patient 7, periods 1 and 2 and patient 10, periods 1 and 2). In the case of patient 7 the results in the two periods of study were not entirely comparable, since he had undergone a secondary operation because of obstruction in the biliary tract a month before the second period of study. However, it is of interest to note that fecal losses of total solids and fats were consid-

TABLE 7.—*Body Weight Before and After Resection of the Head of the Pancreas*

Patient	Customary Weight Before Illness, Pounds	Weight at Time of Study, Pounds	Later Weight, Pounds	Time After Operation, Years	Pancreatin, 5 Grain Tablets Per Day
1	170	120	145	2	15
2	130	97	112	2	45
3	155	113	130	2 3/4	15
4	138	132	130	1	45
5	135	125	120	2	?
6	170	134	160	2 3/4	6
7	175	146	143	2	0
8	145	119	—	—	0
9	145	106	135	½	0
10	206	143	152	½	0

10. Beazell, J. M.; Schmidt, C. R., and Ivy, A. C.: Diagnosis and Treatment of Achylia Pancreatica, J. A. M. A. 116:2735-2739 (June 21) 1941.

erably lower at the second examination than they had been a year previously. Fecal loss of nitrogen was not much changed. The results from the two studies of patient 10 showed no great differences.

SUMMARY

By means of intake-excretion studies using standard test diets we have assessed the degree of impairment of the digestive and absorptive functions of the gastrointestinal tract brought about by the surgical procedure necessary for resection of the head of the pancreas. When the pancreatic ducts were ligated at the time of operation, thus preventing the flow of pancreatic juice into the gastrointestinal tract, impairment of gastrointestinal function was invariably great. It was reduced in some patients by anastomosing the remaining portion of the pancreas to the small intestine. It was also reduced when pancreatin was administered.

Although an increase in the dietary fat and protein of these patients resulted in an increased wastage of fat and protein in the feces, it also resulted in an increase in the amount of these foods which was assimilated.

By taking diets high in calories, protein and carbohydrate and low in fat, and by taking pancreatin if impairment of gastrointestinal function was great, most patients who had undergone resection of the head of the pancreas were able to maintain a satisfactory nutritional status.

ABSTRACT OF DISCUSSION

DR. ALLEN O. WHIPPLE, New York: In regard to the contribution by Dr. Wollaeger and associates, I think that this is a great contribution. It settles one thing, the advantage wherever possible of uniting or reuniting the pancreatic flow by anastomosing the pancreatic duct to a portion of the jejunum. That has been a matter of controversy for years, but I think the work done at the Mayo Foundation has settled it, and I am extremely glad to have this paper appear.

DR. ROBERT ELMAN, St. Louis: Because radical resection of the head of the pancreas is not only feasible but successful, the early diagnosis has become more important. May I suggest one method of early diagnosis? Obstruction of the pancreatic duct experimentally produces an elevation in the serum amylase which returns to normal usually in a week or two. One might expect, therefore, that to deteot an elevation of the serum amylase after obstruction of the pancreatic duct following carcinoma one should examine the blood rather early in the disease. Otherwise a normal value will be found. I looked up a number of our records of proved carcinoma of the pancreas in which serum amylase was measured and found some correlation in certain cases between elevation of amylase and the duration of symptoms. A patient whose blood was examined the soonest after the onset of symptoms—i.e., four weeks—had the highest value. One case in which the blood was examined at seven weeks had a value of 210. More interesting is the third case, in which, six weeks after the onset of symptoms, the value was 150; this dropped a week later to 100. Without the first determination, the elevation would, of course, have been missed. The fourth case at eight weeks had a value of 150 but three days later had dropped to 210. Doubtless, if the examination had been a week later, the value would have returned to normal. It seems that examinations of the blood early in the course of jaundice would reveal elevations in the blood amylase indicative of obstruction in the pancreatic duct. Another diagnostic procedure which should be mentioned is the exploratory incision. More and more associates and I are subjecting these patients with obscure jaundice to a diagnostic exploration which we feel is just as safe as blind biopsy of the liver and gives much more information than can be observed with the peritoneoscope. Moreover, the information desired may be extended as indicated. First of all, when the ascitic fluid is observed, we are obviously dealing with extensive peritoneal metastasis or a hepatogenous type of jaundice. Second, the liver may be visualized and biopsied. Third, the gallbladder is observed and palpated. If it is greatly dilated, one can be sure of extrahepatic obstruction. This demands examination of the duodenum in order to mobilize it and explore the head of the pancreas. A biopsy for frozen section may then be indicated. The surgeon must be prepared for a negative exploration which may be disappointing from the standpoint of therapy but will be gratefully received by the patient, who may then be sure that he does not have carcinoma

DR. EDWARD BERK, Philadelphia: Current methods of studying the pancreas and its function do not permit the diagnosis of carcinoma to the exclusion of all other lesions. Data in the literature pertaining to clinical manifestations of arcinoma of the pancreas are based largely on persons in whom the cancer was well advanced. These observations have tended to fix in our minds the late manifestations. Furthermore, in many of the reported cases, diagnosis was established solely by the findings at operation. The shortcomings of such unconfirmed surgical observations are obvious, especially when they are used to differentiate the clinical manifestations of cancer confined to the head from those in the body or tail of the pancreas. We must realize that pain and loss of weight, altered carbohydrate metabolism and distributed pancreatic function are important clues. We must appreciate the value of roentgen evidence of changes produced in neighboring viscera. Painless jaundice, palpable enlargement of the gallbladder and bulky, fatty stools, while classical and diagnostically significant, are encountered together in only a minority of the cases of pancreatic cancer.

An Unsolved Yellow Fever Problem.—The mode of passage of jungle yellow fever over open country between forests remains one of the unsolved problems in the study of this disease. It is known that monkeys and certain other vertebrates may contract yellow fever by the bite of infected sylvan mosquitoes and harbor the virus for a period of days. Thus the virus may survive and spread in any given forest patch until the susceptible animal population is immunized, or until the insect vectors decrease to such small numbers, due to unfavorable conditions, that they can no longer maintain the cycle. The local migration of monkeys and mosquitoes within their normal habitat logically accounts for infiltration within the forest, but the method by which the virus traverses the open country between isolated forest patches, such as exist in the path of epidemic yellow fever in central and southern Brazil, has not been satisfactorily explained.—Causey, O. R., and Kumm, Henry W., *The American Journal of Tropical Medicine*, May 1948.

ROENTGENOLOGIC TREATMENT OF LYMPH NODES AND SPLEEN IN BRILL-SYMMERS DISEASE

SIDNEY RUBENFELD, M. D.
New York

There is a comparatively newly described disease which is known as giant follicular lymphadenopathy or Brill-Symmers disease.[1] It has been widely recognized by pathologists but is only beginning to attract the attention of clinicians, among whom it is almost always mistaken for Hodgkin's disease. Both are primarily diseases of the lymphoid system and both are characterized, clinically, by generalized, occasionally by localized, enlargement of the superficial lymph nodes and not uncommonly by splenomegaly. Histologically, the changes in

Fig. 1.—Low power photomicrograph showing numerical and dimensional hyperplasia of the lymph follicles in giant follicular lymphadenopathy.

the lymph nodes and the spleen are so divergent that confusion between the two diseases is scarcely possible. It is imperative for the radiologist, to whom falls the duty of treating these patients, to know the underlying morphology and the responses to radiation.

Read before the Section on Radiology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 13, 1947.

From the Department of Radiation Therapy, Bellevue Hospital, New York, Dr. Ira I. Kaplan, Director. Dr. Rubenfeld is visiting radiation therapist, Bellevue Hospital; and associate clinical professor of radiology, New York University College of Medicine.

1. Brill, N. E.; Baehr, G., and Rosenthal, N.: Generelized Giant Lymph Follicle Hyperplasia of Lymph Nodes and Spleen, J. A. M. A. 84: 668 (Feb. 28) 1925. Symmers, D.: Giant Follicular Lymphadenopathy With or Without Splenomegaly, Arch. Path, 26: 1092 (Sept.) 1938; Clinical Significance of the Pathologic Changes in Giant Follicular Lymphadenopathy, ibid. 34: 385 (Aug.) 1942; Clinical Significance of the Deeper Anatomic Changes in Lymphoid Diseases, Arch. Int. Med. 74: 163 (Sept.) 1944.

PATHOLOGY

Giant follicular lymphadenopathy is characterized by numerical and dimensional hyperplasia of the lymph follicles (fig. 1). The follicles may consist exclusively of small lymphocytes (fig. 2). More commonly three types of cells are distinguishable in them:

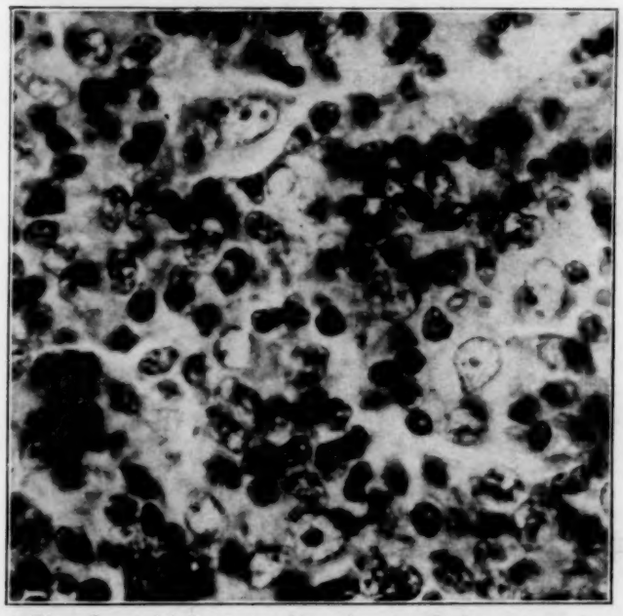

Fig. 2.—A high power photomicrograph depicting three distinguishable types of cells; the large cells with hypochromatic nuclei whose borders are sharply defined and indented (shadow cell); slightly smaller cells, deeper staining and with similarly indented nuclei, and, thirdly, smaller richly chromatic cells which are in the order of large lymphocytes.

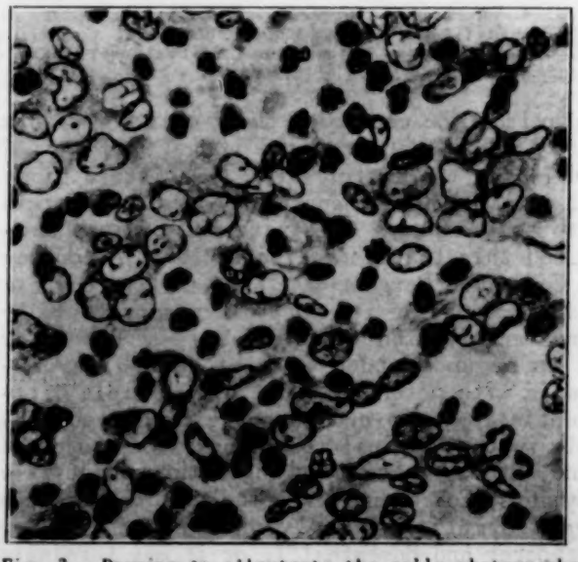

Fig. 3.—Drawing to illustrate the cells photographed in figure 2.

large cells with hypochromatic nuclei whose borders are sharply defined and indented; slightly smaller cells with richly chromatic nuclei but with similarly indented limiting membranes, and cells with still smaller, deeply staining nuclei with poorly defined limit-

ing membranes that are of the type of large lymphocytes (figs. 3 and 4). The hyperplastic lymph follicles may remain intact throughout the course of the disease or they may rupture

Fig. 4.—A large ballooned lymph follicle composed of cells indentified in figures 2 and 3. At point A the rim of lymphocytes shows thinning and initial rupture as a precursor of polymorphous cell sarcoma.

and permit the escape of their cell components into the substance of the nodes (figs. 5, 6 and 7). In the latter event the disease giant follicular lymphadenopathy becomes transformed into polymorphous cell sarcoma. Symmers described this transformation in 1938. According to Cohen and Bergstrom,[2] "The ability of this disease to alter its morphology appears to be fundamental. Giant follicular lymphadenopathy is to be understood as a pattern of hyperplasia with potentialities for multiple differentiation, the end phase being unrecognizable in the original morphology." On the other hand, it may remain unchanged throughout life (Symmers; Cohen and Bergstrom); it may undergo transformation into lymphosarcoma (Baehr, Klemperer and Rosenthal[3]), or it may terminate in lymphoid leukemia or become associated with the histologic changes of Hodgkin's disease (Symmers). It may give rise to a reticulum cell sarcoma (Cohen and Bergstrom), or, finally, it may undergo transformation into the polymorphous cell sarcoma of Symmers. These paths of development are represented in the following manner:

Giant Follicular Lymphadenopathy

– Associated with features of Hodgkin's disease

Lymphatic leukemia	Lympho-sarcoma	Reticulum cell sarcoma	Polymorphous cell sarcoma

CLINICAL FEATURES

Nineteen patients with giant follicular lymphadenopathy or with polymorphous cell sarcoma have been studied. The oldest patient was 59, the youngest 12. The ages in decades were as follows: 1 to 10 years, no cases; 11 to 20 years, 2 cases; 21 to 30 years, 3 cases; 31 to 40 years, 4 cases; 41 to 50 years, 8 cases, and 51 to 60 years, 2 cases. There were 5 females and 14 males.

Enlarged lymph nodes constituted the outstanding clinical feature. Clinically, the nodes appeared as localized enlargements of peripheral groups. In order of frequency, the enlarged lymph nodes were as follows: axillary lymph nodes, 13 patients; cervical lymph nodes, 13 patients; inguinal lymph nodes, 11 patients; occipital lymph nodes, 3 patients; epitrochlear lymph nodes, 2 patients; femoral lymph nodes, 1 patient, and auricular lymph nodes, 1 patient.

The size of the nodes varied from 1 to 3 cm. Neither in size, consistency nor attachments did the nodes present identifying characteristics, a feature which should be emphasized, since clinically they are indistinguishable from those of other lymphomas, notably Hodgkin's disease.

In addition to the presence of enlarged lymph nodes other features were noted as follows: weakness, 5 patients; cutaneous lesions, 4 patients (exfoliative dermatitis); loss of weight, 4 patients; cough, 3 patients; abdominal pains, 2 patients; edema of legs, 1 patient; pallor, 1 patient; burning of feet, 1 patient, and dyspnea, 1 patient. Enlargement of the spleen was present in 3 patients, and 1 had an enlarged liver.

Of interest was the appearance of persistent leukopenia in 4 patients. One patient who has been observed for fourteen years showed a white cell count of 2,000 for over two years.

TREATMENT

Nine patients with giant follicular lymphadenopathy and 10 with polymorphous cell sarcoma have been treated.

The lymph nodes and spleen were treated with roentgen rays of a half value layer of 1 to 2 mm. of copper at a distance of 50 cm. in unit doses that varied between 100 and 200 r (in air). The size of the portal was adapted to cover the area of involvement and varied be-

2. Cohen, S. E., and Bergstrom, V. W.: Giant Follicular Lymphoblastoma, Am. J. Clin. Path. 16: 22, 1946.
3. Baehr, G.; Klemperer, P., and Rosenthal, N. Follicular Lymphoblastoma, Am. J. Path. 7:558, 1931.

tween 50 and 225 sq. cm. A total air dose of 600 to 1,000 r caused recession of the enlarged lymph nodes and spleen in giant follicular lymphadenopathy. Lymph nodes that had undergone transformation into polymorphous cell sarcoma usually required higher doses, to the extent of 2,000 to 3,000 r. In addition to the difference in the degree of response there were variations in the rapidity of recession. Whereas the lymph nodes of giant follicular lymphadenopathy showed rapid decrease or even disappeared, those of polymorphous cell sarcoma were slow to regress and even showed a latent period of two to six months before disappearing. In 1 patient the lymph nodes showed histologic evidence of giant follicular lymphadenopathy, but other nodes in the same patient required 3,000 r before improvement was noted, and it is assumed that some form of mutation had occurred. These variations in response to radiation therapy support the view that giant follicular lymphadenopathy is a relatively benign disease and that polymorphous cell sarcoma is a resistant or malignant phase.

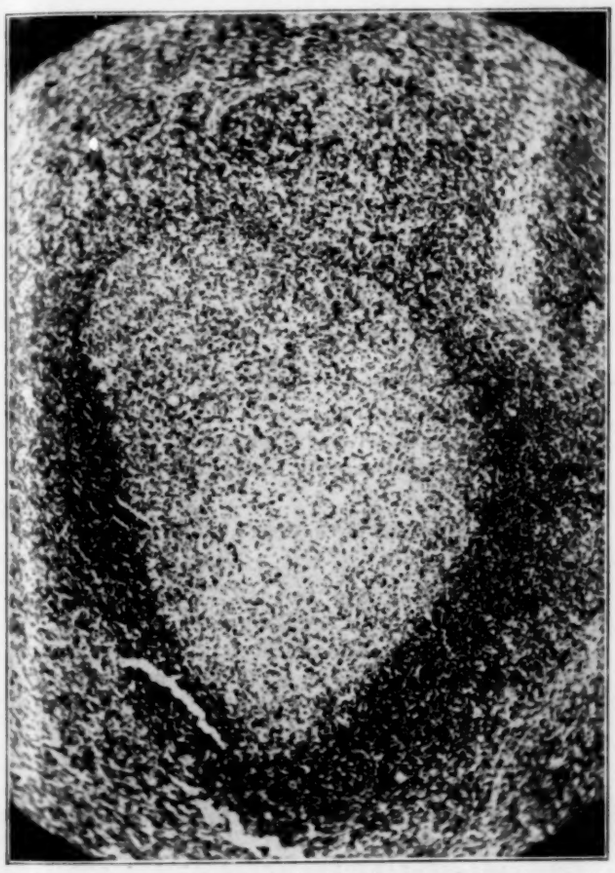

Fig. 5.—An enlarged follicle demonstrating beginning rupture of the lymphocytic rim with occasional follicle cells appearing within the stroma of the lymph node.

Fig. 6.—Showing varying-sized lymph follicles some of which have grown to large size. Some have ruptured, pouring their contents into the stroma of the node, and others have coalesced with neighboring follicles.

REPORT OF CASES

Giant Follicular Lymphadenopathy.—J. H., aged 49, was first seen in October 1933 because of loss of weight and a burning sensation in both feet. The spleen was enlarged to a point 15 cm. below the left costal margin. Enlarged lymph nodes were palpated in the axillary, inguinal and epitrochlear regions. The nodes were firm, nontender and freely movable and varied in size from 1 to 2 cm. The liver was palpated 2 cm. below the margin of the ribs. The white cells numbered 4,200, of which 55 per cent were lymphocytes. Histologic examination of several lymph nodes removed from the left axilla showed numerical and dimensional hyperplasia of the follicles. Treatment was given according to the technic just outlined. The spleen was treated anteriorly and posteriorly every third day alternately until a dose of 300 r was delivered to each side. Two months after completion of treatment the spleen and liver had receded and the lymph nodes were no longer palpable. Further improvement was indicated by the disappearance of the burning sensation in the feet, by return of the normal blood count and by a gain of 25 pounds (11.3 Kg.) in weight. In 1945 the patient was still well and was following his occupation as a tile setter. Blood chemistry studies, sternal marrow examinations and roentgenograms of the long bones were all within the limits of normal. The blood count showed 1,400 leukocytes, of which 65 per cent were lymphocytes. The spleen was palpated 4 cm. below the left costal margin. The blood count has since been repeated on numerous occasions and showed persistent leukopenia. In this case the presence of a relatively high lymphocyte count suggests the possibility of transformation of giant follicular lymphadenopathy into lymphoid leukemia.

Polymorphous Cell Sarcoma.—F. L., aged 12, presented enlarged lymph nodes in the cervical,

axillary, inguinal and epitrochlear regions. The spleen was not palpable. The blood count was normal. Histologic examination of an excised cervical node revealed the changes of polymorphous cell sarcoma. In July and August of 1938 each lymph node region was irradiated until a dose of 700 r (air) was delivered. There was no detectable recession. Treatment was continued until November so that, over a period of four months, each area received 2,200 r (air). At the end of that time no enlarged lymph nodes were apparent. At the present moment, or eight years after the commencement of radiation therapy, the patient is well.

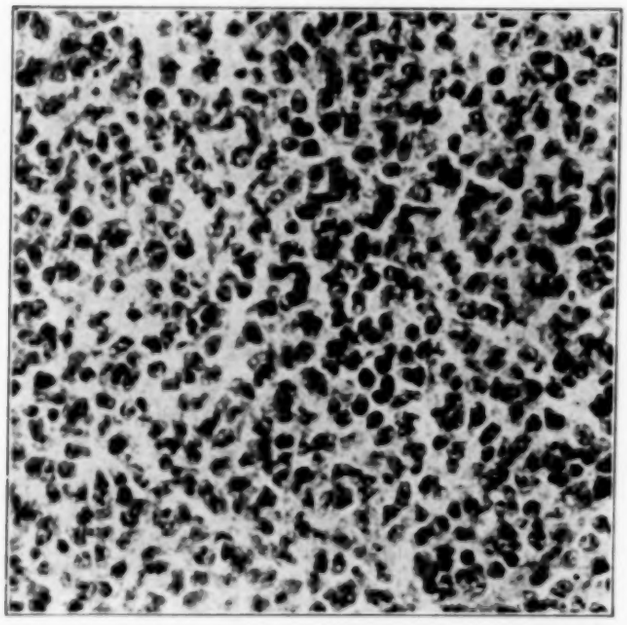

Fig. 7.—High power photomicrograph from a ruptured follicle showing infiltration of the body of the node by large hypochromatic or shadow cells and smaller hyperchromatic cells of the large lymphocyte type.

RESULTS OF TREATMENT

Survival data of this group of patients are summarized in tables 1 and 2.

TABLE 1.—*Patients with Giant Follicular Lymphadenopathy*

Patient	Years of Survival	Notes
J.H.	14	Still under observation
D.W.	10	
W.W.	7	
C.R.	4	Not followed
B.W.	3	Still under observation
D.K.	5	Died in acute toxemia
C.D.	No follow-up	
J.J.	No follow-up	
I.R.	No follow-up	

Four of 7 patients (66 per cent) with giant follicular lymphadenopathy and 6 of 10 (60 per cent) with polymorphous cell sarcoma are known to have survived five or more years. These figures stand in sharp distinction to the relatively less favorable survival rates of lymphosarcoma, 25 per cent; Hodgkin's disease, 20 per cent, and lymphatic leukemia, 15 per cent. The immediate and often dramatic recession of the enlarged lymph nodes in giant follicular lymphadenopathy may be used as an index to distinguish these nodes from those of polymorphous cell sarcoma, the behavior of which is commonly characterized by a slower rate of recession after larger total doses of radiation.

TABLE 2.—*Patients with Polymorphous Cell Sarcoma*

Patient	Years of Survival	Notes
J.H.	12	Still under observation
F.L.	8	Still under observation
M.C.	8	Still under observation
M.W.	7	Still under observation
S.C.	4	Not followed
J.C.	7	Died
P.L.	6	Died
C.S.	4	Died
B.N.	3	Died
W.H.	1	Still under observation

SUMMARY AND CONCLUSIONS

The lymph nodes in giant follicular lymphadenopathy are characterized, histologically, by increase in the number and size of the lymph follicles. When the follicles rupture and their cells escape into the substance of the node, the disease assumes the malignant qualities of polymorphous cell sarcoma. Giant follicular lymphadenopathy may undergo transformation into polymorphous cell sarcoma, into lymphosarcoma, into Hodgkin's disease or into lymphoid leukemia.

The character of the nodes or the symptoms were not different from what appears in other diseases of the lymph nodes. The single noteworthy exception was the persistent leukopenia.

Roentgen therapy of 200 kilovolt potential was used to treat the lymph nodes and spleen. Two noteworthy variations in response were noted: The nodes in giant follicular lymphadenopathy receded or disappeared under doses of 800 to 1,000 r, while the nodes in polymorphous cell sarcoma regressed only after doses of 2,000 to 3,000 r. The nodes in polymorphous cell sarcoma frequently showed a latent period of reaction in contrast to the rapid disappearance of the nodes in giant follicular lymphadenopathy. These variations may be used as a therapeutic test.

Sixty-six per cent of patients with giant follicular lymphadenopathy and 60 per cent of those with polymorphous cell sarcoma are apparently well five or more years after the institution of treatment.

ABSTRACT OF DISCUSSION

DR. SAMUEL E. COHEN, Elmira, N. Y.: It is encouraging to learn that of Dr. Rubenfeld's patients treated for giant follicle lymphadenopathy and for polymorphous cell sarcoma 66 and 60 per cent respectively are well five or more years after

start of radiotherapy. Heretofore, five year survival rates were quoted at 47 to 50 per cent. A second important point which Dr. Rubenfeld makes is the difference in the response between giant follicle lymphadenopathy and the polymorphous cell sarcoma derivative. His follicular lymphomas receded quickly and required moderate radiation, while the sarcomatous variety of Symmers regressed only after intense treatment and showed a lag period before response. These dual features, the general radiosensitivity of the disease and the differences in response of the two allied conditions, have a common pathoanatomic background. I wish to direct your attention to this component. Brill-Symmers disease is a composite entity consisting of various phases and multiple morphologic manifestations. The anatomic forms which this disease can assume are now seven in number. The disease has all the potentialities of a malignant condition, but the degree of malignancy, both pathologic and clinical, varies in the different subdivisions. Giant follicle lymphadenopathy has a relatively better prognosis than other forms in the category. This disease develops and progresses slowly; its response to irradiation is gratifying. This comparatively favorable course of giant follicle lymphadenopathy is determined by its morphology. In its earliest form the disease begins as a lymph node hyperplasia histologically resembling the inflammatory-toxic type. Basically the disease is characterized by a morphologic pattern that is a differentiated form of structural arrangement. It is this degree of differentiation that determines the development, the radiosensitivity and the outcome. In its early phases the disease is reversible or curable. When it has become transformed into a dedifferentiated structural modification the course is irreversible and the outcome is fatal. The development and prognoses of giant follicle lymphadenopathy are attributes of its morphologic differentiation. The prognosis deteriorates as the pattern of differentiation originally inherent in the disease disintegrates. Radiosensitivity does not always indicate curability. While the disease responds in the beginning, it progressively becomes radioresistant. Of those patients surviving five years, about one half to two thirds will not reach the ten year mark, and the impression exists that even ten years is not a sufficient length of time to be sure that a malignant lymphoma may not reappear. Although usually highly responsive to radiotherapy, the disease most frequently slowly progresses, takes the full course of a malignant neoplasm and in the experience of many is invariably fatal under those present methods of treatment as are routinely available. But life can be maintained and in ever increasing survival rates as conclusively illustrated in the cases presented by Dr. Rubenfeld.

Eosinophilic Granuloma of Bone.—During the past seven years eosinophilic granuloma of bone has rapidly assumed increasing importance as a specific clinical entity. This particular destructive lesion mimics a variety of neoplastic processes as well as inflammatory conditions, and should be considered in any differential diagnosis in which single or multiple lesions of bone are encountered. Solitary eosinophilic granulomata may stimulate bone cyst, giant cell tumor, Ewing's tumor, solitary myeloma, osteogenic sarcoma, and osteomyelitis. Multiple lesions may present the same clinical signs and roentgenographic findings as multiple myeloma, metastatic tumor, osteitis fibrosa cystica, Letterer-Siwe disease, and Hand-Schuller-Christian disease.—Maurer, Elmer, M.D., and DeStefano, M.D., *The Journal of Thoracic Surgery*, June 1948.

THE UNITED STATES ARMY AND THE HISTORY OF MEDICINE

HAROLD WELLINGTON JONES, M.D.
Washington, D. C.

Just where should one begin? Obviously at the very beginning of the United States Army. For practical purposes, one should start with the year 1775, for it was then that the history of the Medical Department, or as it was once called, the Hospital Department, first came into being. The Army was at Cambridge following the battle of Lexington, and, from that day to the present, many of its medical officers have made history over a period of one hundred and seventy-two years.

It is by no means easy to make even a fair evaluation of the work of the many persons contributing to the results achieved in nearly a century and three quarters. In our examination, we physicians are confronted with the problems of the dim past and the recent past, with the living and with the dead, with the meager accounts of difficult and laborious tasks of long ago and with the well publicized and skilfully presented stories of the present day. Comparisons are often useless and we should not attempt them. The work of those long dead we can often best appreciate because it has been weighed carefully, and, after a lapse of many years, sober judgment can be rendered.

As a basic principle, we should take it for granted that in the compilation of any history an unbiased writer will not lean toward inclusion of those whose contributions are ephemeral and without lasting influence on the progress of medicine. Also we should remember that the work and influence of a person temporarily on duty with the Army Medical Department should not be credited wholly to the Army organization, but only that part which is inherent to and dependent on Army service, facilities and opportunities.

It is not easy to appraise justly the great medical figures in this recent war, and no one can predict with certainty who will be remembered in the annals of its medical history. It is difficult to achieve immortality even with the best of intentions. Some will have greatness thrust on them, while others will achieve it, not alone, but by a generous willingness to welcome the inclusion of many who held humble office but who well deserve to share the glory.

THE AMERICAN REVOLUTION

The American Revolution was a sterile one as far as medical literature is concerned, and of the some 1,400 physicians who took part in it, but 3 or 4 wrote anything of importance. James

Read before the Section on Miscellaneous Topics at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J. June 11, 1947.

Thacher[1] kept a journal of the period from 1775 to 1783, and our knowledge of the day to day happenings of the Medical Department is largely due to him.

It is my belief that John Morgan of Pennsylvania, born in 1735 and a noted pupil of John Hunter, was the greatest medical leader of the Revolutionary War. To him we owe our first hospital regulations, and one cannot read them or his correspondence with Washington unaware of his commanding stature. Possessing an admirable character, he was persevering, unselfish and indefatigable. Despite the controversial phase of his administration his achievements should live in the history of American medicine.

THE PERIOD IMMEDIATELY FOLLOWING THE REVOLUTION

In the period immediately following the revolution there is practically nothing to record concerning medicomilitary operations or discoveries on the part of our medical officers, and there is little to interest the historian. Not until 1818, with the appointment of Joseph Lovell as Surgeon General, did the Medical Department have anything to be proud of. Young Dr. Lovell was a friend of Andrew Jackson; his home, the famour Blair House, was close to the White House. Lovell is responsible for the best set of sanitary regulations the Army had ever had up to this time. He also founded the Army Medical Library.

The same era produced William Beaumont, who was born in 1785, entering the Army in 1812. His early record shows thar he possessed an inflexible and uncompromising character. In 1822 came his great opportunity, when he was called to care for Alexis St. Martin, who had been severely injured by a charge of duck shot which carried away the anterior half of the sixth rib, lacerated the lung and diaphragm and perforated the stomach, leaving a permanent gastric fistula. Beaumont's place in history is secure as a result of his unparalleled opportunities for observation. Following the publication of his "Physiology of Digestion or Experiments on the Gastric Juice,"[2] his name became known in the far corners of the earth. Beaumont's contributions to our knowlege of digestion are acknowledged generally as the greatest in this field up to the time of Pavlov, late in the nineteenth century. While his military superiors were not unaware of the fame accruing to the Medical Department of the Army as a result of Beaumont's studies, there seems to have been a lack of official enthusiasm for his continuance in research, and he resigned from the Army in 1839.

THE CIVIL WAR

In the War between the States shone two brilliant luminaries, William A. Hammond and Jonathan Letterman. Hammond, in his thirties, was appointed Surgeon General in 1861 over the heads of so many of his superiors that it is useless to count them. Almost at once he secured authority to place all the general hospitals under the command of The Surgeon General, and they have remained there ever since. He collected a host of medical statistics of the war, and this procedure has never ceased. He is responsible also for the remarkable collection of pathologic specimens of the Civil War. These were ordered placed in Washington, and that was the beginning of the Army Medical Museum. He inaugurated the Army monthly sanitary reports, an important feature in the history of preventive medicine. Almost everything Hammond began he saw to a conclusion, and most of his important work continues in effect. Strange to say, his reward for these meritorious reforms and innovations was dismissal from the Army by sentence of a General Court Martial. Long after the war, the Congress corrected this monstrous injustice and restored him to his place of honor. By that time, all Hammond cared for was his good name. He wanted no more of military life. His success as a neurologist in his later years has no connection with the Army, but is cited merely to emphasize his extraordinary versatility.

In a position contemporaneous with Hammond is Jonathan Letterman, once the forgotten man of the United States Army Medical Department. Surgeon Letterman revolutionized the transportation of the wounded from the battlefield, for not since the time of Larrey, Napoleon's chief medical officer, had any great advance been made. Letterman's ambulance service during the latter half of the Civil War has made history, and his example in the present century has never been lost sight of. Our present system of evacuating the wounded, now reaching a stage of perfection once undreamed of, dates back to Letterman's conception and solution of a problem which had ever been the despair of Army medical officers.

The War of the Rebellion produced other great names, some of them of men who, through their surgical experience, rose to dizzy heights in the profession and influenced greatly the history of medicine, but they are not to be claimed by the Army. "The Medical and Surgical History of the War,"[3] compiled by Otis, Smart, Woodward and Huntington, was a mighty and enduring contribution. Since that day, our Medical Department has never failed to record for posterity the medical history of our armed conflicts.

THE CLOSE OF THE NINETEENTH CENTURY

With the end of the Civil War came still another period of sterility, and I am able to include, up to the closing years of the century, but two instances in which the Medical

1. Thacher, J.: A Military Journal During the American Revolutionary War, from 1775 to 1783, Boston, Cottons & Barnard, 1827.

2. Beaumont, W.: The Physiology of Digestion with Experiments on the Gastric Juice, Burlington, C. Goodrich, 1847.

3. Otis, G. A.; Smart, C.; Woodward, J. J., and Huntington, D. L.: The Medical and Surgical History of the War of the Rebellion, United States War Department, Surgeon-General's Office, 1870-1879.

Department of the Army secured any preeminence in professional fields, to influence in any considerable degree the march of medical science. In the domain of bacteriology, George M. Sternberg was gospel for a time. He had the distinction, independently of Pasteur, of discovering the Pneumococcus. Sternberg is not well remembered today, but his claim to a place in the company of the elect seems to rest on a sound basis. The other name, that of John S. Billings, has a unique significance. Billings was the immortal originator of the Index Catalogue, and never did bibliographer become so famous over night. Billings has other claims to distinction in that he was the founder of the greatness of the Army Medical Library, the planner of the Johns Hopkins Hospital and the lever that helped to raise the United States Public Health Service to its present proud position. Add to this the fact that he consolidated three great New York libraries into one public library system before he died, and you cannot resist him even if you do not remember him. Seldom has a man labored so diligently and left so much to live after him.

In a day long past, the Medical Department of the army produced a number of excellent naturalists and ornithologists. Albert J. Myer, for whom Fort Myer was named, began his Army service as a medical officer, and later became Chief Signal Officer. He founded the meteorologic service of the United States. Frederick C. Ainsworth also began as a medical officer, but becoming impatient of delay incident to obtaining data necessary for pension applications, founded the Record and Pension Office, the forerunner of the Veterans Administration of today. Leonard Wood made history as a combat officer, rising to be Chief of Staff and later Governor General of the Philippines. He exercised a not inconsiderable influence in stamping out mosquito-borne diseases in Cuba. In later years, his administration in the Philippines aided greatly the development of the modern humane treatment of leprosy.

To sum up, one may say, if I may be excused for the repetition, that in strictly medical endeavors in the closing years of the last century, one calls to mind only Billings and Sternberg as deserving of a large place in medical history. This is not to deny credit to the many who made worth while endeavors connected with opening a new land west of the Mississippi. In general, one can say, therefore, that the United States Army made little important medical history up to the beginning of the twentieth century, and its main achievements in this field were almost entirely those of men who worked alone, often with little or no recognition or Government encouragement.

Just before the beginning of the present century, Walter Reed, fired no doubt by Sternberg's work, entered the field of preventive medicine with his epoch-making discovery of the mode of transmission of yellow fever. Major Reed was assisted by James Carroll and Jesse Lazear, whose names are linked with his to the glory of the United States Army. It would be difficult to estimate the saving in human life and treasure which has resulted from the work of the Yellow Fever Board.

THE TWENTIETH CENTURY

We should recall that the work on yellow fever was one of the first pieces of scientific research for a definite and announced purpose in which the War Department was actively interested. Within a few years, William Crawford Gorgas likewise had made his name immortal by his sanitary work in the Panama Canal Zone. This followed directly on Reed's discovery, and the organized sanitary campaign waged by General Gorgas, often with insufficient financial support, was one of the greatest in history. It was responsible for much of the success in zone sanitation and mosquito-borne disease prevention achieved by the Army in succeeding years.

Some years before the outbreak of the First World War, Frederick F. Russell began his great task on the elimination of typhoid from the Army by the use of prophylactic vaccine, following the lines suggested by Sir A.E. Wright. The result of Russell's work has been astounding, and typhoid has long ceased to exist in our Army. These results led to many other prophylactic measures, notably the compulsory protection of American forces from tetanus.

Bailey K. Ashford's labors in the elimination in great part of ancylostomiasis, or hookworm disease, in Puerto Rico should be referred to. It has not been given the wide attention it deserves, and Ashford should be regarded as one of the great benefactors of the Western World.

In the field of pulmonary tuberculosis, beginning with the establishment of Fort Bayard as a tuberculosis hospital, the Army contributed much of value in the last third of a century. For this, George E. Bushnell was in great measure responsible. Despite his comparative anonymity, I look on Bushnell as a far-sighted genius, well worthy of grateful remembrance.

The fact that drinking water can be quickly and cheaply sterilized in the field by means of sodium hypochlorite was demonstrated by an unassuming medical officer who never wrote for publicity. Carl R. Darnall is to be credited with this epochal discovery, which lighted the way to the modern treatment of municipal water supplies by chlorine. William J. Lyster, by his invention of the field sterlizing bag, aided the practical applica-

tion of Darnall's discovery to army field service.

In the early years of the twentieth century, research in tropical medicine in the Army went on apace. Charles F. Craig in parasitology, Edward B. Vedder in beriberi, Henry J. Nichols in yaws and Raymond Kelser in the control of rinderpest in the Philippines made important contributions not to be lost sight of. I mention Fielding H. Garrison and would like to claim him for the Army for his great contributions to the history of medicine. However, he was a civil service employee of the War Department until late in life. Only when his work was done did he receive a commission in the Army, and his services subsequently were not outstanding. As a historian on the strictly military side one should not forget Louis C. Duncan, whose analysis of the battles of the Civil War are of a high order.

During the First World War, the work of individuals was subordinated largely to team work for the greater benefit of the whole Army. Harvey Cushing's brilliance in head surgery, as a notable exception, can be credited, in part, to the Medical Department with which he was then connected. Most of our medical officers did their work as sanitarians, administrators and executives, receiving little in the way of personal prestige, for that was reserved for the great captains and kings. General Merritte W. Ireland's splendid organizing ability, however, was such that it brought him appreciation and distinction that will be long remembered. His influence has made itself felt for more than a generation.

SUMMARY

To summarize the scientific and practical work of the Medical Department of the Army in the century and a half since the Revolution and ending in the period some years after the close of the First World War, I think one can say that the elimination of yellow fever and typhoid and the sanitary clean-up in the Canal Zone are certainly among the great medical accomplishments of all time. The discovery of the means of sterilizing water supplies by chlorine, the elimination of ancylostomiasis in a great portion of Puerto Rico and the successes in the institutional treatment of tuberculosis are certainly notable achievements. It cannot be claimed for the Army that many important medical or surgical discoveries have been made in the strictly clinical fields, but I should like to mention the surgical contributions of William L. Keller in handling fracture in the field and in the surgery of empyema. Our late Surgeon General, Norman T. Kirk, has made many valued contributions to the study of amputations, on which no man is better qualified to speak.

It may be remarked that it is not the particular work of individuals that has reduced the noneffective and mortality rates in the Army, but rather the systematic use of preventive measures of demonstrated soundness in their application to large masses of men living under the same conditions and also under complete and orderly control, that has brought about satisfactory end results. Even here one cannot lose sight of the individual, for the history of medicine is concerned largely with personalities. Therefore, in closing, I take the liberty of listing chronologically the twelve greatest medical names of the Army, accompanied by their triumphs, who I feel deserve a place in medical history during the century and a half following the American Revolution.

1. The researches of William Beaumont in human digestion

2. The vision of William A. Hammond and his contributions to the study of pathology

3. The organizational scheme of evacuating wounded from the battlefield, perfected by Jonathan Letterman

4. The bibliographic research and the founding of of the Index-Catalogue of medicine, by John S. Billings

5. The discovery of the mode of transmission of yellow fever, by Walter Reed

6. The contributions to the study of bacteriology, by George M. Sternberg

7. The practical sanitary measures instituted by William C. Gorgas, resulting in the elimination of mosquito-borne disease in the Panama Canal Zone

8. The United States Army's record in the care and treatment of pulmonary tuberculosis, which received its impetus from the early work and enthusiasm of George E. Bushnell

9. The introduction of vaccination against typhoid in the United States Army, by Frederick F. Russell, leading the way to important later work in immunology

10. The discovery of a means for the practical sterilization of water by means of chlorine, by Carl R. Darnall

11. The elimination of ancylostomiasis, or hookworm, from large areas at Puerto Rico, by Bailey K. Ashford

12. The coordination of medical elements in the European Theater of Operations in World War I, by Merritte W. Ireland

Here I close this brief summary of accomplishment by the United States Army Medical Department, hoping that I have made a just appraisal of the results, which I am confident will live in the annals of historical medicine, leaving the important work of the war which has just ended to those who will one day follow me.

Clinical Notes, Suggestions and New Instruments

LYMPHOCYTIC CHORIOMENINGITIS

Report of a Case Occurring in a Granary Harboring Infected Mice

W. PAUL HAVENS JR., M. D.
Philadelphia

The occurrence of lymphocytic choriomeningitis in persons from homes where mice have been proved to be carriers of the virus is well known [1] A few cases have occurred in closely circumscribed areas Farmer and Janeway [2] recorded 4 cases in persons living within an area of two blocks in Boston Dalldorf and associates [3] reported 3 cases, occurring over a period of two years, in persons living in or adjacent to one apartment building where infected mice were found It has been suggested that small, persistent foci of infection exist, on the basis of the known natural history of the disease in mice and the circumscribed range of activity of mice The percentage of infected house mice varies apparently in different communities, and it has been recorded as 21 5 per cent in Washington, D C,[4] and 4 per cent in Boston [5] and New York [6]

The diagnosis of lymphocytic choriomeningitis is usually not suspected unless attention is directed to signs and symptoms suggestive of meningoencephalitis, although it has been shown that generalized systemic infection may occur without any evidence of involvement of the central nervous system [7] It is not known how often the disease manifests itself in this form, nor is it known how often apparently asymptomatic infection occurs. The demonstration of neutralizing antibodies in the blood of as many as 10 per cent of the adult population, chosen at random, suggests that they may occur more frequently than is suspected [8] However, in spite of the diagnostic methods now available, less than 100 proved cases of this disease have been recorded up to the present time Many of these represent infections acquired during experimental work with the virus, so that the number of proved naturally occurring cases is still small

It is the purpose of this paper to report the isolation of lymphocytic choriomeningitis virus from a patient with the disease and from mice trapped in a granary where he worked The results of a survey to determine the possibility of infection in 6 other persons who worked in the same granary are also recorded

REPORT OF CASE

J. H., aged 15, was admitted to the Pennsylvania Hospital on Dec. 27, 1946, complaining of headache and stiff neck Three days before admission, he had frontal headache, chilliness and sore throat. He was nauseated and vomited once During the next two days he was aware of stiffness of the neck and photophobia Physical examination revealed a well developed and nourished white boy who appeared acutely sick and lethargic The rectal temperature was 102.8 F. (39.3 C.), the pulse rate 80 and the respiration rate 22 The face was flushed, the upper eyelids were edematous and the conjunctivas were congested Photophobia was present, and there was tenderness to pressure and pain on motion of the eyeballs Flattening of the right nasolabial fold was present The ocular fundi were normal except for slight blurring of the margins of the optic disks There was tenderness over the posterior muscles of the neck, and mild nuchal rigidity was present Moderately enlarged and tender anterior and posterior cervical lymph nodes were palpable, and the pharyngeal mucosa was congested The heart and lungs were normal and the liver and spleen were not palpable The deep tendon reflexes were equal but hypoactive The Kernig sign was present bilaterally The Babinski sign was not present

Laboratory Data.—On the day of admission, the hemoglobin measured 15 Gm per hundred cubic centimeters and the erythrocytes numbered 5,400,000 and the leukocytes numbered 7,000 cells per cubic millimeter, with 44 per cent polymorphonuclear leukocytes, 48 per cent lymphocytes and 8 per cent monocytes The urine was clear, yellow, acid, with a specific gravity of 1 028. There was no albumin or sugar, and the stained urinary sediment was normal Boerner-Lukens and Eagle flocculation tests of the blood gave negative results Culture of the blood was sterile Lumbar puncture revealed faintly cloudy spinal fluid with an initial pressure of 350 mm of water, containing 800 cells per cubic millimeter, of which 70 per cent were lymphocytes Stained smear of the centrifuged sediment revealed no bacteria, and culture was sterile

Course of Disease.—During the ensuing five days, the temperature declined slowly by lysis, reaching normal on the seventh day of disease Headache, lethargy, photophobia and lymphadenopathy continued unabated for the first two days of hospitalization and thereafter diminished so that by the eighth day of disease the patient was asymptomatic Convalescence was uneventful and recovery was complete.

On the fifth day of disease, the leukocytes numbered 10,000 cells per cubic millimeter, with 87 per cent large lymphocytes. Both relative and absolute lymphocytosis persisted for the ensuing week Heterophile antibody agglutination tests on the patient's serum gave negative results on the sixth and the twenty-fourth day of disease.

Isolation of Virus.—Lymphocytic choriomeningitis virus was isolated in white mice and guinea pigs from both spinal fluid and blood obtained from the patient on the fourth day of disease This strain of virus was serologically indistinguishable from the W E [9] strain of lymphocytic choriomeningitis virus.[10]

Two weeks after the onset of illness, 3 gray mice were trapped in the granary where the patient had worked A strain of virus, indistinguishable immunologically from the strain of virus obtained from the patient and from the W E strain of virus, was isolated from the pooled brains of these mice.

Identification of the strains of virus isolated from the patient and the gray mice as lymphocytic choriomeningitis was performed, in each instance, by demonstrating the specific soluble antigen [11] of choriomeningitis in extracts of the spleens of guinea pigs inoculated with the original material as well as certain subsequent passage material This was corroborated by the neutralization of both strains of virus with known hyperimmune lymphocytic choriomeningitis (W E.) guinea pig serum [9] In addition, guinea pigs immune to the W E. strain of virus were not susceptible when inoculated intracerebrally with the recently isolated strains of virus and, conversely, guinea pigs immune to the newly isolated strains of virus were not susceptible when inoculated intracerebrally with the W.E strain of lymphocytic choriomeningitis virus.

In order to substantiate further the concept that the newly isolated strains actually were derived from the patient and the

From The Pennsylvania Hospital and The Jefferson Medical College of Philadelphia

This investigation was conducted, in part, with the aid of the Commission on Virus and Rickettsial Diseases, Army Epidemiological Board, Office of the Surgeon General, United States Army, Washington, D C

1. Armstrong, C., and Sweet, L. K. Lymphocytic Choriomeningitis Report of Two Cases, with Recovery of the Virus from Gray Mice (Mus Musculus) Trapped in the Two Infected Households, Pub Health Rep. 54:673-683, 1939.
2. Farmer, T W., and Janeway, C. A.: Infections with the Virus of Lymphocytic Choriomeningitis, Medicine 21:1-63, 1942.
3. Dalldorf, G.; Jungeldut, C W., and Umphlet, M D Multiple Cases of Choriomeningitis in an Apartment Harboring Infected Mice, J.A.M.A. 131:25 (May 4) 1946
4. Armstrong, C.: Some Recent Research in the Field of Neurotropic Viruses, with Especial Reference to Lymphocytic Choriomeningitis and Herpes Simplex, Mil Surgeon 91:129-146, 1942.
5. Yamarat, C.: A Study of Lymphocytic Choriomeningitis, Thesis, Harvard School of Public Health, 1940
6. Jungeldut, C. W., and Dalldorf, G., Epidemiological and Experimental Observations of Poliomyelitis in New York City (1943-1944), Am. J. Hyg. 43:49-64, 1946.
7. (a) Lepine, P.; Mollaret, P., and Kreis, B.: Receptivite de l'homme au virus murin de la choriomeningite lymphocytaire Reproduction experimentale de la meningite lymphocytaire benigne, Compt. rend. Acad. d. sc. 204:1846-1848, 1937. (b) Smadel, J. E.; Green, R. H.; Paltauf, R. M., and Gonzales, T. A.: Lymphocytic Choriomeningitis: Two Human Fatalities Following an Unusual Febrile Illness, Proc. Soc. Exper Biol. & Med. 49:683-686, 1942.
8. Wooley, J. G., Stimpert, F. D.; Kessel, J. F., and Armstrong, C.: A Study of Human Sera Antibodies Capable of Neutralizing the Virus of Lymphocytic Choriomeningitis, Pub. Health Rep. 54:938-944, 1939
9. The W.E. strain of lymphocytic choriomeningitis virus was obtained from Dr J E. Smadel, Director, Department of Virus and Rickettsial Diseases, Army Medical Department Research and Graduate School, Washington, D. C.
10. Rivers, T M., and Scott, T F. McN.: Meningitis in Man Caused by a Filtrable Virus, J. Exper. Med. 63:415-432, 1936.
11. Smadel, Green, Paltauf and Gonzales, 7b Smadel, J. E., and Wall, M J.: Identification of the Virus of Lymphocytic Choriomeningitis, J. Bact. 41:471-430, 1941.

gray mice trapped in the granary, the original materials which had been stored at dry ice box temperature were again inoculated into healthy mice and guinea pigs. Lymphocytic choriomeningitis virus was again identified in each original inoculum. Finally, in the patient a rising titer developed of both complement-fixing and neutralizing antibodies in the blood to his own strain of virus as well as to the virus isolated from the brains of the gray mice trapped in the granary.

Serologic Study.—The diagnosis of lymphocytic choriomeningitis in the patient was corroborated by the appearance of a rising titer of complement-fixing and neutralizing antibodies in the blood to the W.E. strain of lymphocytic choriomeningitis virus.[12] Because of the isolation of virus from the brains of gray mice trapped in the granary where the patient worked, an attempt was made to determine the serologic response of 6 other boys who had worked in the same room. Serum was obtained from all 6 boys two and one-half months after the onset of disease in the patient. These boys had been at work in the granary for periods ranging between three and fourteen months. None of them had been sick during this time, and none of them had demonstrable complement-fixing or neutralizing antibodies to the strains of lymphocytic choriomeningitis virus isolated from the patient or the infected mice, or to the W.E. strain of virus.

COMMENT

The patient had been working in the granary for four months before he became sick. During this time, he had frequently removed dead mice from traps, the last time being two to three weeks before the onset of disease. The other 6 boys who had worked in the same room for periods ranging from three to fourteen months did not recall handling mice at any time, suggesting that they may not have had sufficient exposure to virus to become infected. The possibility exists, of course, that 3 of them who had been there from seven to fourteen months might have been infected, with a subsequent disappearance of antibodies, although this is not likely in view of the apparent persistence of neutralizing antibodies in the blood of infected persons.

Of particular interest, then, is the fact that of 7 boys working in a room known to harbor mice infected with lymphocytic choriomeningitis virus, the only one to contract the disease was a boy who frequently removed mice from traps. Although the manner of spread of this disease to man is not known exactly, the evidence presented in this paper suggests that even in an infected focus the opportunity for man to acquire the disease may, at times, depend on such close contact with infected mice as occurs in handling them or materials contaminated with their excreta. Because of this, it would seem practicable to recommend the use of forceps or a paper towel to remove house mice from traps, with careful washing of the hands after such an operation.

SUMMARY

Lymphocytic choriomeningitis virus was isolated from the spinal fluid and blood of a patient with the disease, and also from the brains of gray mice trapped in the granary where he worked. Six other boys who had worked in the same granary for periods ranging from three to fourteen months had no demonstrable complement-fixing or neutralizing antibodies to this virus.

12. These tests were done by Dr. J. E. Smadel, Director, Depart. of Virus and Rickettsial Diseases, Army Medical Department Research and Graduate School, Washington, D. C.

To Test the Scope of the Experimental Method.—In 1901 Rockefeller Institute for Medical Research was founded. Though the idea was one man's, though it was made real through the beneficence of another, though its form was determined by physicians who were scientists as well, it must be deemed a folk expression. For it was what Americans wanted; since pioneer days the homely "try and see" had been their habit, and of late they had begun to have exciting thoughts on what experiment might bring to pass for the betterment of life, if carried out in a large way. Research institutions had already been set going in Europe, but The Rockefeller Institute had a larger aim: it was to test the scope of the experimental method as such.—Peyton Rous, Simon Flexner and Medical Discovery, *Science*, June 11, 1948.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

SUPPLEMENTAL REPORT ON ORGANOMERCURIAL COMPOUNDS

The Council authorizes the publication of the following papers by John H. Brewer, Ph. D., of the Biological Research Laboratory, Hynson, Westcott & Dunning, Inc., Baltimore, Md., and H. M. Powell, Sc. D., of the research laboratories of Eli Lilly and Company, Indianapolis, in reply to the Report of the Council (J. A. M. A. 136:37-41 [Jan. 3] 1948), "The Bacteriostatic and Bacteriocidal Actions of Some Mercurial Compounds on Hemolytic Streptococci," by H. E. Morton, L. L. North and F. B. Engley Jr.

The authors (Morton and his co-workers) of the original report have commented on the papers by Drs. Brewer and Powell. The Council believes that these comments should be published as part of the supplementary report on organomercurial compounds.

Austin Smith, M.D., *Secretary.*

REDUCTION OF INFECTIVITY OF CERTAIN PATHOGENIC BACTERIA BY "MERCUROCHROME"

JOHN H. BREWER, Ph.D.
Baltimore

In a recent report the Council on Pharmacy and Chemistry of the American Medical Association, commenting on the article, "Bacteriostatic and Bactericidal Actions of Some Mercurial Compounds on Hemolytic Streptococci" by Morton, North and Engley,[1] expresses deep concern as to the value and usefulness of certain mercurial antiseptics, including "mercurochrome" (merbromin N.F.). As a matter of fact, a challenge was made to the manufacturers of mercurial antiseptics in the statement that this "is a field in which wishful thinking is dangerous," and experimental verification of the usefulness of the products was requested. It seems that the Council is mainly impressed by these observations which presume to show that the infectivity of hemolytic streptococci has not been impaired by treatment with mercurial antiseptics. In reply my associates and I submit laboratory data which answer this question and others raised by the Council.

Although the technic described in this report does not simulate conditions of clinical use, in order to avoid argument this technic has been utilized in our laboratory study. The laboratory evidence which has been obtained from this study of well over 2,000 mice infected with the same strain of hemolytic streptococcus C 203 as used by Morton and also

From the Biological Research Laboratory, Hynson, Westcott & Dunning, Inc.

Mr. C. Baxter McLaughlin and Mrs. Beatrice Day Lilley gave technical assistance.

1. Morton, H. E.; North, L. L., and Engley, F. B., Jr.: The Bacteriostatic and Bactericidal Actions of Some Mercurial Compounds on Hemolytic Streptococci, J. A. M. A. 136: 37-41 (January 3) 1948.

with other pathogenic bacteria enables us to state that the infectivity of bacteria treated with solutions of "mercurochrome" is not only definitely impaired but in many instances is completely nullified.

In accordance with the Council's suggestion, furthermore, observations have not been limited to one organism or to one species of animal; it is therefore believed that the results completely answer the challenge as made.

For example, it has not been possible to substantiate the statement made by Morton and associates in their summary, namely: "Hemolytic streptococci, an example of non-spore forming pathogenic organisms, while in a state of bacteriostasis produced by a mercurial compound, are still infectious for the animal body. Bactericidal rather than bacteriostatic action of the compounds is necessary to prevent a generalized infection." On the basis of laboratory experiments using a far greater number of animals and different species of infecting organisms, it has been determined that bacteria in a state of bacteriostasis cannot be reactivated by the animal body to produce infection except when massive doses are used--and even then the great majority of animals survive. These results therefore show that bacteriostasis practically eliminates the chance of infection.

The experiments further prove that the initial study was far too limited in scope. If greater numbers and different species of animals had been used, and if the minimum lethal dose or reasonable multiples thereof had been used as an inoculation, an entirely different picture would have been presented--as will be demonstrated by the experimental work.

In tables 1 and 2 is shown the protection afforded mice inoculated with various dilutions of C 203 which had been previously exposed to 1 per cent solution of "mercurochrome" for ten minutes. A study of these tables reveals clearly that the infectivity of the organism was so reduced by treatment with the mercurial that the great majority of mice survived the test—even when the greatest concentration of culture was injected. Table 1 illustrates a single experiment in the series, whereas table 2 is the composite of of all experiments.

In order to prove beyond question the fact that it is the mercurial compound which affords protection by impairing the infectivity of the organism, table 3 presents the results obtained by neutralizing "mercurochrome" in the animal body by injections of BAL. These results as outlined in tables 1, 2 and 3 prove conclusively that the infectivity of the pathogenic organism C 203 is significantly impaired by exposure to "mercurochrome" solution. These facts will be illustrated in more detail in the discussion on experimental work which follows, which also further answers the Council's challenge. The scope of the experiments has been broadened by the use of other pathogenic organisms, other routes of inoculation and larger animals. The observations in these respects cast some doubt on the usefulness of the Morton technic for purposes of determining adequately the clinical usefulness of mercurial antiseptics.

TABLE 1.—*Results of Intraperitoneal Injections into Mice of Various Dilutions of Streptococcus C 203 Culture Which Has Been Exposed to 1 per cent "Mercurochrome" Ten Minutes*

	Ten Mice Received Each Dilution Number of Mice Dead at End of 7 Days				
Dilution of Culture	1:10	1:100	1:1,000	1:10,000	1:100,000
C 203 culture control (no drug)	10	10	9	7	3
C 203 culture treated with 1% "mercurochrome"	2	0	0	0	0
Drug control 1% "mercurochrome" (no culture)	0				

It should be noted that all animals received injections of 0.1 cc. of the culture rather than 1 cc., and for this reason the minimum lethal dose may appear to be less than that obtained in the usual C 203 titration.

TABLE 2.—*Results of Intraperitoneal Injections into Mice of Various Dilutions of Streptococcus C203 Culture Which Has Been Exposed to "Mercurochrome" for Ten Minutes*

	Forty Mice Received Each Dilution Number of Mice Dead at End of Seven Days					
Dilution of Culture	1:10	1:100	1:1,000	1:10,000	1:100,000	1:1,000,000
C203 culture control (no drug)	40	39	37	28	9	4
C203 culture treated with 1% "mercurochrome"	8	9	3	3	0	0
Drug control 1% "mercurochrome" (no culture)	0					

Culture, 0.1 cc. of C203M, injected intraperitoneally with or without 1 per cent "mercurochrome."

Forty mice had injections of 0.1 cc. 1 per cent "mercurochrome" intraperitoneally as a drug control.

TABLE 3.—*Results of Intraperitoneal Injections into Mice of Various Dilutions of Streptococcus C203 Culture Which Has Been Exposed to "Mercurochrome" for Ten Minutes and Then Injected with BAL*

	Ten Mice Received Each Dilution Number of Mice Dead at End of Seven Days			
Dilution of C203M	Infusion Culture Control	C203M 1% "Mercurochrome" Mixture		
		No BAL	BAL - 2 Hr.	BAL - 6 Hr.
1:10	10	2	10	1
1:1,000	10	0	10	0

Numbers represent the deaths among 10 mice receiving injections in each dilution.

BAL control — 10 mice had intramuscular injections of 9.1 cc. 1 per cent BAL — no deaths resulted.

A virulent culture of C203M was diluted 1:10 and 1:1,000 in 1 per cent "mercurochrome." After ten minutes exposure of the organisms to the mercurial compound, 50 mice received intraperitoneal injections of 0.1 cc of the 1:10 dilution and 59 mice, the 1:1,000 dilution.

At intervals of two and six hours, 10 mice with injections of each dilution received 0.1 cc. 1 per cent BAL in oil intramuscularly.

EXPERIMENTAL WORK

Using the same technic for determining the virulence of the culture, it was possible to prove that the culture used in the current study was of equivalent virulence. Although a large percentage of the data of Morton, North and Engley is given over to determining the minimum lethal dosage of their culture, only a 1:10 final dilution of culture was used in testing the mercurial compounds. This dilution of culture represents many thousands of organisms, and since these workers stated that four organisms produce death in control animals, it was of interest to determine the protective value of the mercurial compounds in terms of multiples of lethal doses. It should be noted at this point that it was not possible to study the effect of 2 per cent "mercurochrome" solution used in the report to the Council. According to observations in the present experimental work, 2 per cent solution of "mercurochrome" cannot be used because the 0.1 cc. quantity is greater than LD/50 for mice.

Utilizing a culture of streptococcus C 203 M obtained from Dr. Morton and also a strain of C 203 which was obtained from Drs. Long and Bliss, Johns Hopkins School of Hygiene and Public Health, the experiments were repeated many times, using over 100 mice in each experiment. In addition to the 1:10 dilution of the culture in the antiseptic mixture used by these workers, 1:100, 1:1,000, 1:10,000 and 1:100,000 dilutions of the culture in antiseptic were also made. Protection afforded by the mercurial compound can readily be seen from data in tables 1 and 2 which were referred to previously.

Even though thousands of lethal doses of organisms are present in the 1:10 dilution, it was possible to get better than 80 per cent protection at this dilution. In all other dilutions of the culture an even higher percentage of protection was obtained.

From a consideration of the data in tables 1 and 2, it is rather apparent that bacteriostatic activity has effectively reduced the infectivity of the organism. In order to prove that it is the bacteriostatic effect of the mercurial compound and not the natural defenses of the body or even germicidal activity, the experiments outlined by tables 1 and 2 have been repeated. However, in this series 2,3-dimercaptopropanol (BAL) has been used to neutralize the mercurial agent in vivo. It is well recognized that this is an extremely powerful neutralizing agent for heavy metals. (This dimercaptan readily forms insoluble salts with mercury and many other heavy metals.)

The results of these series of experiments are presented in table 3. It can be seen that if 2,3-dimercaptopropanol is not injected, the results are identical with those reported in tables 1 and 2. If, however, 0.1 cc. of the agent in oil is injected into each animal two hours after the "mercurochrome"-treated bacteria, all the animals die of a streptococcic septicemia. This indicates clearly that 2,3-dimercaptopropanol neutralized the mercurial agent which was in or on the treated bacteria, and those bacteria freed of bacteriostatic restraint were thereby enabled to cause death. From this significant experiment it can be said that by holding an organism bacteriostatically a general infection may be prevented.

Another important fact is outlined in table 3. When 0.1 cc. of the drug in oil is injected into each animal six hours after the treated bacteria, the results are quite similar to those obtained in the series of animals not given injections of the drug. This experiment strongly indicates that the defense mechanisms of the body have taken care of the bacteria which had been held bacteriostatically until such time. This experimental work has been extended to include a study of phagocytosis and actual time of death of various organisms within the animal body and forms the basis of a much longer report to be published shortly.

In answer to the Council's question as to "whether other infectious agents would differ and lose their virulence when exposed to mercury may well be investigated," a pathogenic pneumococcus type I, obtained from Drs. Long and Bliss, has been used. The results of these experiments are shown in tables 4 and 5. It is immediately evident that complete protection is afforded by the exposure of the organisms to 1 per cent "mercurochrome," even in the 1:10 culture dilution.

TABLE 4.—*Results of Intravenous Injections into Mice of Various Dilutions of Pneumococcus Type I Which were Exposed to "Mercurochrome" for Fifteen Minutes*

	Ten Mice Received Each Dilution			
	Number of Mice Dead At End of Seven Days			
Dilution of culture	1:10	1:100	1:1,000	1:10,000
PnI-culture control (no drug)	10	10	10	9
PnI culture treated with 1% "mercurochrome"	0	0	0	0
Drug control 1% "mercurochrome" (no culture)	0			

Another fact demonstrated by this table is that injection is made by the intravenous route rather than by the intraperitoneal route. The same result, that is, complete protection, is obtained by both routes of injection. The reason that "mercurochrome" gave as good protection by the intraperitoneal injections was not because of the phagocytic response or local tissue reaction in the peritoneal cavity. This is proved by the protection which was also afforded when the intravenous route of injection was used. It was not possible to repeat Morton, North and Engley's type of experiment using the intravenous route with C 203, since it took many thousands more

organisms to kill the controls by this route and only sporadic deaths occurred with use of the 1:10 dilution. This route of injection is exceedingly important in considering the clinical usefulness of the organic mercurial compounds. Since they are used primarily as local or topical antiseptics, it is evident that one of the most important routes by which bacteria may get into the body from a wound is the intravenous route.

In an effort more closely to approach the clinical use of these mercurial compounds,

Table 5.—*Results of Intravenous Injections into Mice of Various Dilutions of Pneumococcus Type 1 Culture Which Had Been Exposed to Mercurochrome for Ten Minutes*

	Fifty Mice Received Each Dilution			
	Number of Mice Dead at End of Seven Days			
Dilution of Culture	1:10	1:100	1:1,000	1:10,000
Pal culture control (no drug)	31	26	5	7
Pal culture treated with 1% "mercurochrome"	0	0	0	0
Drug control 1% "mercurochrome" (no culture)	0			

It is apparent that the pneumococcus in this experiment was less virulent than when the experiment shown in table 4 was performed. However, the mice were all protected in each case.

laceration experiments were made on several hundred mice by various methods. The mice were lightly etherized, and a high speed grinder was used to produce a surface wound. Another method was also used: many razor blades were bolted together with 1/32 inch (0.08 cm.) spacing washers and uniform cuts were made through a fiber guide. The straight virulent cultures were mopped into these wounds, and then at various times the several antiseptics and germicides were applied. Since the controls which received the straight culture and no antiseptic would not be infected in many instances, and never consistently, these results are not tabulated in this present paper. We were unable to infect guinea pigs or rabbits with straight cultures of these organisms employing the technic used in the report to the Council, even though corrections were made for body weight. Therefore, the effectiveness of "mercurochrome" in larger animals could not be studied by this technic.

For more than ten years we have been well aware that mercurial compounds are not germicides in the strict sense of the word; this has been pointed out at length in two previous articles in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.[2] In November 1947 the spore suspensions of the various organisms referred to in the 1939 article,[2a] which had been exposed to the market strength of the various organic mercurial preparations, for ten years were opened and planted into thioglycollate medium, and without exception they all grew out within forty-eight hours. A full discussion of this experiment is given in the paper mentioned earlier in this report.

A lengthy discussion of this subject might well be written, but the Council has stated that their interest is in "experimental verification" of the ability of mercurial compounds to impair the infectivity of these organisms and this has been the subject of this study.

Other organic mercurial preparations listed in New and Nonofficial Remedies have been studied in this series, but since the investigations have not been as extensive as with "mercurochrome" solutions tabulations of the results with these compounds are deferred.

2. (a) Brewer, J. H.: The Antibacterial Effects of the Organic Mercurial Compounds, J.A.M.A. 112: 2099, 1939; The Bacteriostatic and Bactericidal Actions of Some Mercurial Compounds on Hemolytic Streptococci, J.A.M.A. 136: 37-4) (January 3) 1948. (b) Clear Liquid Mediums for the "Aerobic" Cultivation of Anaerobes, ibid. 115: 598, 1940.

SUMMARY

1. The Council on Pharmacy and Chemistry has previously presented as a report the work of Morton, North and Engley[1] challenging the scope of usefulness of mercurial antiseptics. The specific questions raised by that report and the Council have been answered herein by experimental evidence. This has been accomplished by extending their work and by introducing new experimental data.

2. Experimental results obtained in a study of intraperitoneal injection of "mercurochrome" (merbromin)-treated hemolytic streptococci strain C 203 indicate (tables 1 and 2) that more than 80 per cent of the animals survive even massive inoculations of thousands of lethal doses of organisms so treated.

3. Experimental results obtained in a study of another route of infection, namely, intravenous injection of "mercurochrome"-treated pneumococci type 1 indicate (tables 4 and 5) that all animals survive the massive inoculations of thousands of lethal doses of organisms so treated.

4. Experimental results obtained in scarification experiments, which would more closely simulate clinical use, were inconclusive in that control animals could not be consistently infected.

5. Experimental results obtained in the study of intraperitoneal injection of "mercurochrome"-treated bacteria, followed by the injection of the mercurial neutralizer BAL, indicate (table 3) that it is the bacteriostasis produced by the mercurial compound which prevents the death of the animals.

6. These experimental results therefore prove that bacteriostasis resulting from the treatment of pathogenic bacteria with 1 per cent solution of "mercurochrome" impairs the infectivity of these bacteria to such an extent that the chance of infection is practically eliminated.

ANTIBACTERIAL ACTION OF "MERTHIOLATE" AGAINST HEMOLYTIC STREPTOCOCCI

H. M. POWELL, Sc. D.
Indianapolis

The recent report of Morton and collaborators[1] dealing with the purported lack of germicidal action of organomercurial coumpounds prompts the submission of this brief report. It is neither supportive nor contradictory of the Morton publication; rather, it is intended to point out the manner in which the outcome of experiments of this sort is influenced by some of the conditions on the laboratory bench which are frequently given little consideration by laboratorians and readers alike.

To judge from the results observed during the past several years in experiments in the laboratory with organomercurial agents (and other compounds of the germicide-antiseptic-disinfectant group), sulfonamide drugs and various antibiotics in rather large numbers, three main conditions of testing may affect the outcome of the tests considerably. These are temperature, time and quantity of bacteria. Chick and Martin[2] some forty years ago dealt with such varying conditions, but lately they have not been given much consideration.

To simplify the problem tests similar to those of Morton and his associates have been conducted, using the same technic and the same bacterium; namely, the mouse-virulent hemolytic streptococcus strain C 203 and "merthiolate" (sodium ethylmercurithiosalicylate). No other organomercurial compounds are dealt with in this particular report. Also, the report does not touch on phenol (which the previous workers[1] included) at this time, because a recent publication[3] has indicated that phenol-"killed" bacteria can be "resurrected" by special methods of cultivation which I have not studied.

The culture has been medicated at two temperatures, namely, at room temperature (as used by Morton and collaborators, and which of course is exceedingly indefinite) and also at 37 C. Instead of one dilution, a series of decimal dilutions of test culture have been used and medication of the culture with "merthiolate" has been extended from five minutes up to sixty minutes.

After various periods of medication of bacterial culture with the organomercurial compound, inoculums from such tubes were *(a)* planted into thioglycollate broth and incubated at 37 C. for seven days and *(b)* injected intraperitoneally into white mice, which in turn were observed for seven days (in case survival was this long).

The thioglycollate broth was that specified by the National Institute of Health for sterility tests and was the same variety as employed in the original study.[1] The white mice used here were from a stock used during several years for chemotherapy tests of numerous drugs (mostly sulfonamide drugs and antibiotics) and were fatally vulnerable to intraperitoneal injections of 10^{-7} to 10^{-8} dilutions of hemolytic streptococcus C 203.

The results of these tests under varied conditions are as anticipated; they show that the effectiveness of "merthiolate" in the form of aqueous solution depends on temperature, time and quantity of bacteria. The results, moreover, are about the same as judged either by whether medicated culture shows growth in thioglycollate broth or whether it kills mice. Under the conditions that were used, "merthiolate" although it appears to be ineffective at room temperature, is effective at 37 C.

The upper portion of the accompanying table shows the details of the tests conducted at room temperature. Other than slight action at the longest exposure, the organomercurial agent appears here to be without germicidal action. These results are similar to those obtained under similar conditions when thioglycollate broth first came into use in this way in 1941, and also when medicated virulent bacteria under the same conditions were injected into animals in this laboratory in 1929.[4] Furthermore, these results agree with those of Morton, North and Engley.

The bottom portion of the table shows the details of the tests conducted at 37 C. "Merthiolate" 1:1,000 in 5 cc. quantities appears to be germicidal for 0.1 cc. of a 10^{-2} dilution of culture in fifteen to thirty minutes. It seems from these results that either the thioglycollate broth or the mice may be depended on in most instances to give true answers as to the presence of viable bacteria. In prolonged tests top virulence is apt to drop before the viability of the culture is affected. This is evident in many kinds of chemotherapeutic tests not reported here.

The largest doses of hemolytic streptococci medicated with the mercurial agent in the foregoing tests were less in volume than the single doses used by Morton and others. However, the largest doses, namely, 0.1 cc. of undiluted culture, comprise approximately 1,000,000 MLD (minimum lethal doses) for white mice, and this appears to be a somewhat higher number of MLD than Morton and associates employed. Doses of 0.1 cc. 10^{-5} and 0.1 cc. 10^{-6} dilutions of culture were tried (but the

1. Morton, H. E., North, L. L., and Engley, F. B.: The Bacteriostatic and Bactericidal Actions of Some Mercurial Compounds in Hemolytic Streptococci, J.A.M.A. 136:37-41 (Jan. 3) 1948.

2. Chick, H., and Martin, C. J.: The Principles Involved in the Standardization of Disinfectants and the Influence of Organic Matter on Germicidal Value, J. Hyg. 8:654-697, 1908.

3. Flett, L. H.; Haring, R. C.; Guiteras, A. F., and Shapiro, R. L.: The Revival of Organisms Presumably Killed by Phenol, J. Bact. 50:591-595, 1945.

4. Series of records in this laboratory of dates during March and April, 1929.

results are not shown here); these gave erratic results for obvious reasons.

In the last twenty years a flood of laboratory publications dealing with antibacterial titers of one kind or another has appeared on germicides, antiseptics, disinfectants and other antibacterial agents, and also, especially during the latter half of this time, many such laboratory papers have appeared on antibiotics. Lately many additional publications have appeared on inhibitory agents which block the biologic action of many types of biologically active agents both synthetic (as for example some of the germicide-antiseptic-disinfectant group) and natural (as, for example, the antibiotics). None of these need to be referred to here.

Use on the laboratory bench of inhibitors such as thioglycollate for organomercurial given antibacterial drug for a bacterial cell compounds, para-aminobenzioc acid for sulfonamide drugs, penicillinase for penicillin and so on has advanced knowledge academically about the precise mode of toxic action of a given chemical agent against the bacterial cell. Perhaps on the basis of these tests and injections of medicated cultures into animals, various antibacterial agents of the antiseptic-germicide-disinfectant group might be reclassified; however, this would likely contribute to more artificiality rather than fill a definite need in view of the results herewith reported.

The concept that the toxic action of any comprises a zone of action rather than a point has been reviewed by Marshall and Hrenoff.[5] These authors indicate that in the antibacterial "spectrum" of a given drug there is a gradual merging of overly strong, nonuseful concentrations of such drug into germicidal concentrations; these in turn merge into bacteriostatic concentrations, and these then even merge in some instances into stimulatory concentrations. All zones except the last one comprise zones of action in which the drug is toxic to bacteria. Failure of laboratory experimenters to keep some such concept in mind along with effects of temperature, time and quantity of bacteria, as has been indicated, leads to "proving" and "disproving," without end, one drug after another. There is added confusion in that the terms germicide, antiseptic and disinfectant have different meanings to different persons, and exact definitions have to be arbitrary.

It is regrettable that there seems to be no single method of assaying the likely efficacy of drugs of the germicide-antiseptic-disinfectant group. These agents are commonly put to such varied jobs that no single assay seems possible. A single assay is as yet impossible for another reason; namely, no one knows with certainty how to measure quantitatively the good accomplished by these drugs when they are used as they have been and will be used.

Tests of Germicidal Action of "Merthiolate" Against Hemolytic Streptococcus C203

Medication at:	Amt. of "Merthiolate" 1: 1,000	0.1 CC. Dose of Hemolytic Streptococcus C203 Culture Diluted:	"Merthiolate" + Streptococcus Mixture										Water + Streptococcus Mixture	
			(a) planted in doses of 0.02 cc. into thioglycollate broth and (b) injected intraperitoneally in doses of 0.05 cc. into white mice after intervals of:											
			5 min.		10 min.		15 min.		30 min.		60 min.		60 min.	
			(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Room temperature	5 cc.	undiluted	+	1,1	+	1,1	+	1,1	+	1,2	+	1,1	+	1,1
	5 cc.	10^{-1}	+	1,1	+	1,3	+	1,1	+	1,2	+	2,2	+	1,1
	5 cc.	10^{-2}	+	1,1	+	1,1	+	1,1	+	1,1	+	2,2	+	1,1
	5 cc.	10^{-3}	+	1,1	+	1,1	+	1,1	+	1,2	+	2,S	+	1,2
	5 cc.	10^{-4}	+	3,3	+	3,3	+	1,3	+	2,3	-	S,S	+	2,2
37 C.	5 cc.	undiluted	+	1,1,1,1	+	1,1,2,2	+	1,2,2,2	-	2,2,2,S	S,S,S,S		+	1,1,1,1
	5 cc.	10^{-1}	+	1,1,1,1	+	1,1,1,2	+	2,2,3,S	-	2,S,S,S	S,S,S,S		+	1,1,1,1
	5 cc.	10^{-2}	+	1,1,1,1	+	1,2,2,2	-	2,S,S,S	-	S,S,S,S	S,S,S,S		+	1,1,2,2
	5 cc.	10^{-3}	+	1,1,2,2	-	2,2,2,S		S,S,S,S	-	S,S,S,S	S,S,S,S		+	2,2,2,2
	5 cc.	10^{-4}	+	1,2,2,2	-	2,S,S,S	-	S,S,S,S	-	S,S,S,S	S,S,S,S		+	2,2,2,S

+ indicates growth of hemolytic streptococci in thioglycollate broth;

- indicates no growth of hemolytic streptococci in thioglycollate broth at seven days.

Each figure indicates the day (after injection) of death of 1 mouse.

S indicates the survival of 1 mouse at seven days. The minimum lethal dose of culture was 0.05 cc. of 10^{-7} dilution as tested on 2 white mice on each decimal dilution of culture up to 10^{-8}. Both mice on 10^{-7} dilution, and neither of the mice on 10^{-8} dilution, died.

5. Marshall, M. S., and Hrenoff, A. K.: Bacteriostasis, J. Infect. Dis. 61:42-54, 1937.

CONCLUSIONS

1 "Merthiolate" (sodium ethylmercurithiosalicylate) is germicidal at normal temperature against a range of seemingly small doses of virulent hemolytic streptococci extending from the smallest up to doses of about 0.1 cc. of 10^{-2} dilution of culture in fifteen to thirty minutes.

2. Such doses of virulent culture, however, are of considerable biologic activity and importance, since this maximum dose contains about 100,000 MLD for white mice.

3. The extent of antibacterial action (germicidal, antiseptic or disinfectant) frequently depends, as has been pointed out before, on temperature, time and quantity of bacteria used.

4. Experience with numerous antibacterial tests and study of the literature on this item (which is about as old as bacteriology) indicate that there is no single method of test or assay of the practical usefulness of this type of drug. A series of diversified tests of each drug should give indications of usefulness.

June 3, 1948

Dr. Austin Smith, Secretary
Council on Pharmacy and Chemistry
American Medical Association
535 North Dearborn Street
Chicago 11, Illinois

Dear Dr. Smith:

Thank you for submitting for our inspection and comments the paper entitled "Antibacterial Action of 'Merthiolate' Against Hemolytic Streptococci," by Dr. H. M. Powell of the research laboratories of Eli Lilly and Company, which has been accepted for publication in THE JOURNAL.

We believe that it is a good item to publish in THE JOURNAL and that the results are important especially because they come from the laboratories of the company which produces and manufactures "merthiolate." The work appears to be carefully planned and carried out. The paper is concise and readily understandable as far as it goes. There are one or two points which we think should be verified to make sure that an error has not been made in typing. In table 1, is the amount 0.05 cc. correct for the amount which was injected into the mice, or should it be 0.5? The former amount is rather impractical to inject accurately into mice.

If the amount 0.05 cc. is correct, then we believe that an error has occurred, as 0.1 cc. of undiluted culture would contain 20,000,000 M.L.D., which were exposed to the action of merthiolate. When 0.05 cc. of the culture-"merthiolate" mixture was injected into mice, the mice would be receiving approximately 200,000 M.L.D. as compared with approximately 500,000 M.L.D. employed by us. Dr. Powell states that he used a somewhat higher minimum lethal dose than we did, but our calculations from his data indicate that he used fewer organisms. It does not alter the picture, but should be clarified for the sake of accuracy in his paper.

Our comments on the paper are as follows:

While Powell states in the first paragraph of his paper that his report is neither supportive nor contradictory of the article by us, the results given in table 1 of his paper are supportive of the statements in the first two paragraphs of the summary in our article. It is well to have this additional supportive evidence from the manufacturers of "merthiolate" to add to the other publications that growth in thioglycollate medium of hemolytic streptococci exposed to "merthiolate" parallels fairly well infectivity for mice.

When 0.1 cc. of culture is mixed with 5 cc. of 1:1,000 aqueous "merthiolate" solution, at room temperature, the results are the same as when water is employed (table). At 37 C. the culture-"merthiolate" mixture had to be held thirty minutes or longer before the compound showed more killing action than water. Only when the number of test organisms was greatly reduced and the temperature of medication was raised to 37 C. was there killing action, but the label on the product as purchased on the open market makes no reference to these limitations of the compound.

One questions that "merthiolate," as it may be used in the practice of medicine or surgery, reacts with infectious micro-organisms at a temperature of 37 C. It is used topically, and the temperature of the surface of the body is generally less than 37 C. (usually it is 30 to 33 C.). Tests have been made on the anti-infecting power of "merthiolate" when used topically, and no protective action was evidenced (work of Nungester cited in more detail later), as one would surmise from the results in table 1 of Powell. Dr. Powell states that "room temperature" as employed by us is indefinite and that he used 37 C. in addition to room temperature. We added undiluted culture to "merthiolate" and allowed it to act on the streptococci for a period of ten minutes at room temperature before injecting into mice. In the results given by Powell in his table 1, with undiluted culture acted on by "merthiolate" it can be seen that no killing action and no protective action was afforded by the "merthiolate" in an exposure of ten minutes at either temperature, so that it is unimportant that we employed only one temperature of medication, namely, that of the room.

It is true that temperature, time and quantity of bacteria affect the outcome of germicidal tests, as Powell states, citing the publication of Chick and Martin of 1908, but there are other important factors which have been noted in the interim. The nature of the environment of the micro-organism can be listed as one of the additional factors, and the publication of Smith, Czarnetsky and Mudd of 1938 was mentioned in our article to call attention to one of the peculiarities of mercury compounds which are used as germicides.

The element of time is important, and frequently it is impractical for the physician or surgeon to wait thirty or more minutes for a compound to exert its germ-killing action, as one might have to do according to the results given in table 1.

The bacteriologist, physician or surgeon never knows the quantity of micro-organisms which he has to destroy. He is usually interested in killing all pathogenic micro-organisms or reducing the number to prevent infection. It is only logical to use cultures of the test organism as they normally grow in appropriate culture mediums, and not a thousandfold or greater dilutions of the test culture, in testing the in vitro killing action of compounds.

Paragraph ten of Powell's article needs to be clarified. As it now stands, it erroneously gives the impression that Powell used a greater minimum lethal dose than we did. According to the legend at the bottom of table 1 (Powell) 0.05 cc. of 10^{-7} dilution of the culture of hemolytic streptococci killed all of the mice (2) inoculated. This would indicate that the culture originally contained 200,000,000 MLD per cubic centimeter. Only 0.1 cc.

of the culture was added to 5 cc. of "merthiolate" solution, and 0.05 cc. of this mixture was subsequently injected into mice. If none of the streptococci were killed, this would indicate that the mice received approximately 200,000 MLD each. The culture used by us contained about 10,000,000 MLD per cubic centimeter. One cubic centimeter of the culture was added to 10 cc. of "merthiolate" solution, and 0.5 cc. of this mixture was subsequently injected into mice. If none of the streptococci were killed, this would indicate that the mice received approximately 500,000 M.L.D. each. When using undiluted culture, Powell was employing less than one-half the number of organisms employed by us, and when using 10^{-4} dilution of the culture he was employing only 20 M.L.D. of streptococci. An exposure of fifteen minutes at 37 C. was required to render these few lethal doses of culture harmless, even when the organisms were suspended in an aqueous medium.

Powell states that the use of inhibitors, such as thioglycollate for organomercurial compounds, has advanced knowledge academically about the precise mode of toxic action of a given chemical agent against the bacterial cell and that this might lead to a reclassification of the antibacterial agents, but this would likely contribute to more artificiality rather than fill a definite need. It is universally known that there are sulfur-containing compounds in the human body, and it is well known that sulfur compounds can inactivate the antibacterial action of mercurial compounds. Our investigation and Powell's show that the animal body is even slightly better than a thioglycollate-containing medium in this neutralizing effect and in supporting growth of virulent hemolytic streptococci. Our paper and Powell's show that growth of "merthiolate"-treated streptococci in thioglycollate medium is proof that the organisms are still infectious if introduced into the animal body. This is ample evidence that knowledge of the mode of action of the mercurial compounds has led to the devising of a more effective test for the anti-infecting property of the mercurial compounds. Attempts at evaluating the power of a compound in preventing infection following topical application required surgical procedures (Nungester, W. J., and Kempf, A. H.: An "Infection-Prevention" Test for the Evaluation of Skin Disinfectants, *J. Infect. Dis.* 71: 174, 1942). By the use of thioglycollate medium comparable information can be obtained more easily, more quickly and more economically. Nungester and Kempf observed that, following the application of a culture of pneumococci to the skin of a mouse, treating the area with aqueous "merthiolate," 1:1,000, and then placing the skin in the peritoneal cavity of the same mouse resulted in death of all the mice of pneumococcic infection. The control mice treated with isotonic sodium chloride solution also showed 100 per cent mortality. Mice so treated, except with a culture of streptococci, and then aqueous "merthiolate," 1:500, likewise showed 100 per cent mortality. The observation by Nungester and Kempf that aqueous "merthiolate," 1:500 and 1:1,000, had no protective action, which in that respect was comparable to isotonic sodium chloride solution, is in line with the observation of Powell that aqueous "merthiolate," 1:1,000, is comparable to water, in that no killing or protective action was exerted on an undiluted culture of hemolytic streptococci at room temperature.

ture by Powell deals with the toxicity of "merthiolate" for streptococci cells. No mention is made to its toxicity for tissue cells. In addition to the several references which were given in our article on the toxicity of the organomercurial compounds for tissue cells, there should be added the articles by Gaul and Underwood and his co-workers (Gaul, L. E.: Overtreatment Dermatitis. J.A.M.A. 127: 439 [Feb. 24] 1945; Underwood, G. B.; Gaul, L. E.; Collins, E., and Mosby, M.: Overtreatment, Dermatitis of Feet, J.A.M.A. 130: 249 [Feb. 2] 1946). In the later article the authors report that of their 400 dermatologic patients, 40 per cent of the patients (160) showed an allergic reaction to one or more of the remedies used and in 35 per cent (56) of the positive reactions the offending substance was one of the organic mercurials. Furthermore, "merthiolate" was responsible for the reactions in 90 per cent of the patients who reacted to an organic mercurial.

The works of Salle and Lazarus, Nye and Welch (cited in our article) all reported "merthiolate" more toxic for tissue cells than for bacterial cells.

In spite of the numerous publications by competent investigators on the extremely weak action of "merthiolate" on bacteria and in preventing infection and its greater toxicity for tissue cells than for bacterial cells, the product bears the label "A stable, stainless, organic mercury compound of high germicidal value, particularly in serum and other protein media." Our work and that of Powell and of Nungester (Nungester and Kempf as well as Nungester, Hood and Warren, Proc. Soc. Exper. Biol. & Med. 52: 287, 1943) demonstrate that the bacteriostasis, so far as "merthiolate" is concerned, is not sufficient to prevent infection.

The authors of the original Council report on organomercurial compounds also commented on Dr. Brewer's paper as follows, under date of June 9 1948:

Our comments on the paper "Studies on the Reduction of Infectivity of Certain Pathogenic Bacteria by 'Mercurochrome,'" by Dr. John H. Brewer, of Hynson, Westcott and Dunning, are as follows:

It seems to us unfortunate that the report by Brewer deals with the subject of antisepsis by mercurial compounds more in the spirit of controversy than as an objective exposition of the essential facts of the situation. Although there are many points in his manuscript to which exception could be made, we prefer to confine our remarks to the essential and relevant facts.

It is the usual procedure to employ culture and germicide in the ratio of 1 part of undiluted culture to 10 parts of germicide in the in vitro testing of germicides, as we used, and not several tenfold dilutions of the test culture. In Brewer's work with bacterial spores along these lines (THE JOURNAL, 1939), he did not use decimal dilutions of the cultures.

The observation by Dr. Brewer that 2 per cent solution of "mercurochrome" was toxic for mice in 0.1 cc. amounts injected intraperitoneally supports our observations; even though some of the mice receiving the 2 per cent "mercurochrome" solution and streptococcus mixture died from causes other than streptococcic infection, some did die of an apparent streptococcic infection (table 3, Morton); this represents the solution of "mercurochrome" supplied to the trade.

The same strain of a particular micro-organism may behave differently in different laboratories and in the hands of different investigators. Although Powell and Brewer and we used the same strain (C-203) of hemolytic streptococci, their

cultures appear different on the basis of infectivity, as can be seen from the recapitulation in the table.

Recapitulation of Reports of Virulence of Hemolytic Streptococci (C-203)

Investigators (Amount/Animal)	Dilution of Culture (C-203) Injected								Approximate M.L.D. per Cc. of Undiluted Culture
	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	10^{-7}	10^{-8}	
Powell (0.05 cc./mouse)	2/2*	2/2	2/2	2/2	2/2	2/2	2/2	0/2	200,000,000
Morton, North and Engley (1.0 cc./mouse)			3/3	3/3	3/3	3/3	3/3		10,000,000
Brewer (0.1 cc./mouse)	10/10	10/10	9/10	7/10	3/10				Less than 10,000
Brewer (0.1 cc. mouse)	40/40	39/40	37/40	28/40	9/40	4/40			

*The numerator is the number of mice that died, and the denominator is the number of mice injected.

It can be seen from this data that Brewer's culture was the least virulent of the three cultures of strain C-203 used by the three groups of investigators mentioned. The fact that Brewer's strain was of such low virulence by various routes of inoculation, including the rubbing into scarified skin of experimental animals, shows that his culture was of limited value for the experimental objective in question. Furthermore, antiseptics or disinfectants are not needed for organisms which are incapable of producing an infection. In the case of the strain of pneumococcus, type 1, Brewer states, in a footnote to table 5 in his paper, that his culture was undergoing variation in virulence during the performance of his experiments.

It can be seen that the last two dilutions of culture used by Brewer in his table 2 contained so few organisms as to contribute no conclusive information to the problem under investigation. In (tables 1 and 2 of Brewer's paper under the column 1^{10} dilution of culture, the mice received less than 100 M.L.D. and 20 per cent were not protected by "mercurochrome" reacting on the streptococci for ten minutes prior to the injection. Under the conditions which we tested "mercurochrome," the mice received in the neighborhood of 100,000 M.L.D. of streptococci exposed to the action of "mercurochrome" for ten minutes and all of the 4 mice that received this culture-"mercurochrome" mixture died of a streptococcic infection. Only when the culture was so dilute that it would kill only 9 of 40 or 4 of 40 mice was it possible for Brewer to protect all of the mice. One would expect something in the way of antibacterial action from "mercurochrome," as several investigators have found it toxic for tissue cells (as mentioned in our article). However, Salle and Lazarus found mercurochrome 262 times more toxic for embryonic tissue cells than for Staphylococcus aureus, and it was the most toxic for tissue cells of the three organic mercurial compounds: "metaphen," "merthiolate" and "mercurochrome."

It is to be noticed that all of the data given in Brewer's tables 1 to 5 are based on work with mice.

It appears that Brewer did demonstrate protection of mice by exposing pneumococcus, type 1, to 1 per cent "mercurochrome" for ten or fifteen minutes before injecting the "mercurochrome"-pneumococcus mixture intravenously into mice. One must bear in mind, however, that pneumococci do not cause death from septicemia as frequently as do hemolytic streptococci. Pneumococci are less resistant than streptococci, and appropriately described controls should be included, as was done by Powell in his tests with streptococci and "merthiolate."

No mention is made in Brewer's report of the relative toxicity of "mercurochrome" for tissue cells as compared to that for bacterial cells.

In view of the 20 per cent mortality consistently obtained following the exposure of 1 to 10 dilution of culture to "mercurochrome," Brewer's conclusion that the chance of infection is practically eliminated seems somewhat of an overstatement.

Sincerely yours,

H. E. Morton, Sc.D.
L. L. North, M.D.
F. B. Engley Jr., M.S.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following reports. HOWARD A. CARTER, *Secretary.*

McINTOSH POLYSINE GENERATOR NOT ACCEPTABLE

Manufacturer: McIntosh Electrical Corporation, 223-233 North California Avenue, Chicago 12.

The McIntosh Polysine Generator 1410 is an apparatus for generating various types of direct and alternating current. Its outstanding feature is stated to be a special alternating current motor generator producing 350 cycle current. It is contained in a mahogany cabinet that can be moved about on casters and measures 104 by 38 by 57 cm. (41 by 15 by 22½ inches). The net weight of the apparatus is 63 Kg. (139 pounds); the shipping weight is 95 Kg. (210 pounds).

The apparatus is designed to deliver seventeen types of current. With this apparatus it is possible also to obtain such accessories as intrauterine dilating electrodes, vaginal electrodes, prostatic electrodes, an aural ionizing chamber, Neiswanger's bag electrode, rectal dilators of polished aluminum "for dilating sphincter muscle with negative galvanic or rapid sinusoidal current" and a "Waddington's Carbon Vaginal Electrode, to be used with ionizing solutions on positive pole in treating uterine fibroids and cervical lacerations."

Among the suggested uses are the treatment of flat or weak feet by the use of superimposed waves, the treatment of otitis media with an ear electrode, the treatment of atonic constipation with a pad electrode over the transverse colon, and the treatment of "Rhinitis or Hay Fever, using Zinc Electrode in nose with positive Galvanism, negative or cervical spine."

In connection with the 350 cycle current it is claimed that this "has the property of obtunding the subcutaneous sensory nerves, permitting deep contractions of muscular tissue without irritation to the skin and with perfect comfort to the patient. The ordinary 60 cycle alternating current does not have this property."

As the result of investigations sponsored by the Council, the following criticisms of the apparatus are made: (1) the lack of convincing evidence to show that this multiplicity of currents is necesary, (2) the confusing nomenclature for the various currents and (3) the lack of information as to the percentage of ripple in some of the currents. Specifically it was found that the A.C. milliammeter, intended to indicate "the amount of current being used," did not conform to the Council

requirement that it should be clear whether the readings represent root-mean-square or peak values; that the booklet of operating instructions was confusing; no convincing evidence was found to support the claim that the "Galvanic Wave" was "of great value in treating adhesion with hard and indurated scars"; it appeared doubtful whether the "Galvanic Sinusoidal" current had a pronounced effect "in building up secretory function, as, for example, a prostate with poor secretion"; no evidence was presented for the contention that the "Superimposed Wave" was good for visceral and pelvic ptosis, deep adhesions, intestinal stasis and flatfoot. The suggested use of a nasal electrode of zinc in the treatment of hay fever has been characterized recently by a well known allergist as a doubtful treatment that has no physiologic basis and has left scars in a lot of noses. The lack of physiologic basis extends to the suggested use of negative galvanic current for dilating the rectal sphincter; it is doubtful whether the smooth muscle cells are so oriented that the direction of the current makes any difference to them.

Because the apparatus embodied so many features lacking demonstrated clinical value, did not conform to published Requirements for Acceptance of Generators for Electrical Stimulation of Muscles and for Ion Transfer, and was promoted in conjunction with other apparatus whose usefulness was questioned, the Council on Physical Medicine voted not to include the McIntosh Polysine Generator in the list of accepted devices.

BLANCHARD PORTABLE PLASTIC RESPIRATOR ACCEPTABLE

Manufacturer: Bergere, Inc., 724 South Spring Street, Los Angeles.

The Blanchard Portable Plastic Respirator is an apparatus designed to administer temporary artificial respiration especially to patients afflicted with poliomyelitis. It is a transparent plastic shell or cuirass surrounding the chest and sealed at the neck, axilla and waist with rubber sheet bands, thus leaving the arms, legs and head exposed. The cuirass is connected to a power unit consisting of an accordian-type bellows and an electric motor. The bellows create a negative pressure within the chestpiece and hence expand the lungs. Positive pressure may be generated by the unit also. Control valves regulate the pressure. The action is similar to that of the tank type of respirator, with the exception that arms and legs are free. This apparatus may be operated without electric power, being equipped with a crank for manual operation. The dimensions of the package containing the Blanchard shield case are 30 by 48 by 60 cm. (12 by 19 by 22 inches); those of the package containing the power unit are 38 by 38 by 51 cm. (15 by 15 by 20 inches). Together, uncrated, they weigh 41 Kg. (90 pounds). Crated, the whole weighs 61 Kg. (135 pounds) and measures 43 by 74 by 102 cm. (17 by 29 by 40 inches).

The Blanchard Portable Plastic Respirator has been found to conform to the "Requirements for Acceptance of Cuirass Type Respirators" published in THE JOURNAL Nov. 15, 1947, page 715. It has a limited use in applying emergency artificial respiration. Its usefulness in acute poliomyelitis, according to the evidence that has been reviewed by the Council, is confined to transporting the victim from a remote place to a center where a tank type of respirator is available. The Blanchard Portable Plastic Respirator does not take the place of a tank type of respirator and is accepted only as supplemental equipment.

The acquisition of this appliance by an institution does not adequately equip a medical organization or clinic for sustained artificial respiration to patients with acute poliomyelitis and respiratory failure. The device is not accepted for emergency artificial respiration by life-saving crews such as those of the police and fire departments. In chronic poliomyelitis the device is recommended for "weaning" the patient from his dependency on prolonged artificial respiration. The Blanchard Portable Plastic Respirator is also useful for temporary artificial respiration when nursing care and physical therapy are given to a patient who is otherwise confined to a tank type of respirator.

The Council on Physical Medicine voted to include the Blanchard Portable Plastic Respirator in its list of accepted devices.

BLEY UTERECTOR NOT ACCEPTABLE

Manufacturer: Bley Corporation, P. O. Box 189, St. Charles, Ill.

The Uterector pessaries are made of stainless, noncorrosive alloy, such as those used in prosthetic dental restorations. The device is constructed with a bulge in the coil. The coil is securely attached to a cup-shaped end plate which fits against the cervix when the device is properly adjusted. The Uterector is supplied in a set consisting of ten pessaries, an applicator, a wire gage and a slide gage. The length of the units range between 2 to 1 inch (5.08 to 2.54 cm.) and the diameter of the cap from ¾ to 1 inch (1.91 to 2.54 cm.).

The recommended uses for this device are listed in the booklets (1) "The Uterector Manual of Technique" and (2) "Uterine Obstructions and Myometrial Tetany," which were submitted by the manufacturer. In the opinion of the Council intrauterine stems may have a place of treatment of dysmenorrhea, but their effectiveness has not been satisfactorily demonstrated. It is much simpler to dilate the uterus on two or three successive occasions. This makes the use of a stem pessary unnecessary.

The firm states that the Bley Uterector is definitely contraindicated in pregnancy and that it must not remain in the uterus longer than fifty to sixty days. In its descriptive literature, the manufacturer states that the "Uterector makes Obsolete" a number of stem pessaries shown in the accompanying photograph. Although the device in question is not recommended as a contraceptive appliance, it is relevant to point out that the products which it is said to "make obsolete" have been promoted for the aforementioned purposes. The firm claims that it does not have any advertising matter but that the sets are distributed to members of the medical profession by direct selling of authorized salesmen and through the surgical supply houses. According to the manufacturer, sales talks are based on the information recorded in the aforementioned booklets.

The Council on Physical Medicine voted not to include the Bley Uterector in its list of accepted devices because of: (1) lack of evidence of the effectiveness of the pessary, (2) lack of conclusive evidence that it will not cause infection or irritation and (3) lack of critical evidence that effectiveness of the pessary is superior to that of dilation on two or three successive occasions.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Twelve dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JULY 3, 1948

THE 1948 SESSION

Exactly 11,963 Fellows of the American Medical Association registered their attendance at the Annual Session of the American Medical Association held in Chicago June 21-25. The physicians began pouring into the city during the preceding week for attendance on the Interamerican Cardiological Congress and a score of specialistic society meetings concerned with many different aspects of medicine. The trustees, the officers and many councils and committees of the Association began their meetings and continued into the Annual Session.

Among the unusual features of this session were a series of television programs sent by short wave to the Navy Pier, medical schools, hospitals and hotels; an athletic performance in which the participants were persons handicapped by amputation and other disabilities; a complete series of exhibits related to atomic energy associated with a series of papers that covered this subject; the adoption of a new constitution and bylaws by the House of Delegates which serve to facilitate more prompt and decisive action on subjects of interest to the House of Delegates, and with all this a series of public meetings, social gatherings and educational features seldom equalled in any other organization. Indeed, the Annual Session of the Association, which last year included almost 16,000 Fellows and this year about 12,000, represents an assemblage which in quantity of attendance and material reaches four or five times the scope of any other medical assemblage.

Unfortunately, the Republican National Convention secured most of the available good space in the press and over the radio, so that concentration of the public on the doings of scientific medicine was difficult to stimulate. Nevertheless the total number of radio programs was far above that of any previous Session. Television programs were also "short-waved," "televised" or "videoed" during the meeting.

Among the subjects that aroused much interest in the House of Delegates were consideration of the various prepayment plans for hospitalization and medical care, the practice of medicine by hospitals, the question of cooperation with the American Red Cross in the establishment of a nationwide blood bank system, the establishment of a new council on rural health and medical care and a variety of reactions toward past, present and future medical events. While some resolutions were introduced that might have had the effect of "upsetting the apple cart," the delegates carefully considered all these proposals in properly constituted reference committees which heard great numbers of interested physicians and then brought to the House of Delegates mature opinions which in a majority of instances received ready acceptance by the House. The great stability and scope of the American Medical Association and its system of organization and operation tend to the avoidance of hasty actions based on insufficient information.

Unusual at this Session of the American Medical Association was a considerable change in the officers of the Association resulting largely from the termination of terms of service by trustees and other officers, so that the House of Delegates now has a new Speaker, Dr. Francis F. Borzell of Philadelphia, a new Vice-Speaker, Dr. James R. Reuling, Bayside, N. Y., three new Trustees, Drs. Walter B. Martin of Norfolk, Va., Edwin S. Hamilton of Kankakee, Ill., and Gunnar Gundersen of LaCrosse, Wis., as well as new members on the Council on Medical Education and Hospitals, Medical Service and Scientific Assembly. Dr. Roy Fouts, who has served for some years as Speaker of the House of Delegates, was elevated to the Vice-Presidency of the Association and received a great ovation from the House of Delegates in recognition of his earnestness and manifest fairness in his decisions as Speaker of the House. With the assumption of the Presidency of the Association by Dr. R. L. Sensenich, the elevation of Dr. Ernest E. Irons to the position of President-Elect following many years of service to the organization as trustee and member of the councils, with the reelection of the Secretary, Dr. George F. Lull and the Treasurer, Dr. J. J. Moore, the Association moves on in its steady drive toward maintaining the ideals of American medicine and its system of medical practice.

Once again much of the great scope and tremendous utility of the exhibits was demonstrated. The Scientific Exhibit was larger than any previously held and its usefulness for graduate education of both general practitioners and specialists was apparent in the vast crowds of physicians who circulated through its aisles and who stood for hours listening to and watching demonstrations by men who had actually conducted the work. The motion picture show and the special conferences on diabetes, fractures and physical medicine were constantly overwhelmed with capacity attendance. The Art Show occupied a tremendous space between the Scientific and Technical Exhibits and in the interest it evolved and the attendance it attracted reached a new high point. The exhibits by medical publishers, pharmaceutic manufacturers and practically every

important industry associated with the practice of medicine in the United States were larger than any ever previously held and were in their own way a graduate course in medicine.

The weather in Chicago was hot and humid and a major cause for complaint. The Board of Trustees will no doubt consider the possibility of an earlier date for any future meeting in Chicago. The next Annual Session will be held in Atlantic City, where the weather is seldom insalubrious, and thereafter in San Francisco and again in Atlantic City. The next Interim Session, which is designed to appeal primarily to general practitioners, will be held in St. Louis on November 30 and December 1 and 2 and will be preceded by a National Conference on Public Relations and a meeting by the secretaries of the state medical societies and the editors of the state medical journals.

The continued growth of the American Medical Association with its many councils, committees and bureaus, its gatherings for conferences on every aspect of medical science and practice, its extensive features in the field of publication, have demanded an addition to the present headquarters building which is now in the process of construction.

Many foreign physicians attended the Session of the American Medical Association just held in Chicago. Practically every important nation in the world was represented and there were many physicians who came from the Latin American countries, particularly Argentina, Chile and Peru, as well as from the European nations, Australia, New Zealand and South Africa. Already the interest in world medicine exemplified by the activities of the World Health Organization and the World Medical Association is growing. In this work the American Medical Association is assuming the leadership that is its responsibility because of the breadth and the high scientific quality of medicine practiced in our country.

SURGICAL TREATMENT OF CANCER OF THE RECTUM AND RECTOSIGMOID

Cancer of the rectum is an easily diagnosed lesion which when extirpated radically by surgical methods has a most favorable prognosis. While there is small difference of opinion that radical surgery is the method of choice in its treatment, the rediscovery of the "pull through operation" has in recent years created a certain amount of controversy as to the type of procedure most acceptable in the majority of cases. A cursory survey of the literature of a quarter of a century ago would have revealed to the most ardent enthusiast for the sphincter-saving type of operation a paucity of data on favorable end results of such attacks.

Certainly the milestones of progress in the treatment of cancer of the rectum and sigmoid colon, beginning as long ago as 1826 and labeled with the name of the Frenchman Lisfranc, have created an interesting vista of experience on which to look back. As one reaches the horizon of present day surgery of the lower bowel, one finally views the work of Miles as the greatest contribution in this field of surgery which has yet been made. The combined abdominoperineal resection of the rectum as developed by him has yet to be improved on by any surgeon of this day.

Since Miles's epic publication there have been innumerable surgeons both great and small who have tried to develop many procedures for the preservation of the anal sphincter in the treatment of cancer of the rectum. In the light of the recent anatomic studies carried on by David and Gilchrist and again by Coller and Ransom, there seems little justification for this effort. Furthermore, there has been to date no reported series of five to ten year cures of cancer of the rectum with preservation of the anal sphincter which can compare with the results achieved by the Miles operation.

In the light of the extensive and painstaking work of David and Gilchrist, who have studied an average of fifty-five glands per specimen in 200 resections, our routine pathologic studies in most instances seem rather inadequate. They do, however, lend additional evidence to the thesis that the presence or absence of glandular involvement exerts a profound influence on prognosis. It shows that longevity is in direct proportion to glandular involvement. This, in turn, is entirely dependent on the grade of the growth. In short, the lower the grade of the lesion, the later metastasis will occur. In contrast to this, the higher the grade, the earlier extension will take place. These observations emphasize the fundamental importance of as radical an operation as possible with as widespread a removal of gland-bearing tissue—a basic surgical principle.

The bitter cry against the abdominal anus as pointed out by Pfeiffer is raised by "those who do not have them and do not need them to remain alive." Again, he observed that "of course, the uncontrollable perineal colostomy is infinitely inferior to the abdominal anus in all respects except sentimental nonsense." With this thesis the great majority of surgeons who have had wide experience in this field are in hearty accord. By contrast one finds a few men in this country and abroad who persist in trying to stem the tide of current thought by expending great effort to maintain the anal sphincter or condone the tragic incapacity of an incompetent perineal colostomy.

The secret of proper adjustment to an abdominal colostomy is the realization that this is the safest and the best method of insuring longevity. The surgeon who is a staunch advocate of the combined operation as the best possible means for saving the life of his patient will not belie the confidence of his patient in a faltering dissertation on the pros and cons of an abdominal anus versus perineal colostomy or the doubtful possibility of retaining the use of the anal sphincter. It is this uncertainty that a colostomy is essential which leads to hesitation, dissatisfaction and maladjustment.

Current Comment

THE PRESIDENT-ELECT—DR. ERNEST EDWARD IRONS

The election of Dr. Ernest Edward Irons to be President-Elect of the American Medical Association is in accord with tradition which selects for the highest position in the affairs of the medical profession one who has for many years served his fellow physicians in a series of appointments. Dr. Irons was born in Council Bluffs, Iowa, Feb. 17, 1877. He attended the University of Chicago, receiving the Bachelor of Science degree in 1900 and the Doctor of Medicine from Rush Medical College in 1903. He was awarded the degree of Doctor of Philosophy for research in 1912. He has practiced medicine in Chicago since 1903. From 1902 to 1904 he was assistant in pathology and bacteriology at the University of Chicago, under Professor E. O. Jordan. Early in his career he became associated at the Presbyterian Hospital in Chicago with Dr. James B. Herrick and with Dr. Frank Billings; he occupied various positions on the faculty of Rush Medical College, ultimately becoming Professor of Medicine. He is now Clinical Professor Emeritus in the University of Illinois Medical School, with which Rush has been combined. In 1924 Dr. Frank Billings resigned as Dean of the faculty of Rush Medical College and was succeeded by Dr. Ernest E. Irons in the joint position of Dean of Students and Dean of the Faculty. In 1923 the Board of Trustees elected him to membership on the Council on Pharmacy and Chemistry, and he served on that council through to 1941; he has always supported the standards adopted by the scientific councils of the American Medical Association. His achievements have been recognized by membership in the Central Society for Clinical Research, the Association of American Physicians, The American College of Physicians, the American Board of Internal Medicine, the American Society for Clinical Investigation, the American Association of Pathologists and Bacteriologists and the Society of American Bacteriologists. In 1946 he was elected President of the Institute of Medicine of Chicago. He was President of the American College of Physicians in 1944 and President of the American Association for the Study and Control of Rheumatic Diseases in 1934. The Nu Sigma Nu established an annual lectureship in his honor at Rush Medical College. He himself gave the Charles R. Bardeen Memorial Lecture at the University of Wisconsin Medical School in 1940. He was President of the Society of Medical History of Chicago in 1940. He has also been awarded the "Gold-headed Cane" of the School of Medicine of the University of California, held previously by Dr. James B. Herrick, with whom also Dr. Irons has been associated through a career of many years. His contributions to medical research have been concerned with focal infection, iritis and rheumatic diseases. More recently he has written extensively in the fields of medical economics and social medicine. In World War I he became colonel in command of the Base Hospital at Camp Custer near Battle Creek, Mich., and during World War II he represented medicine in many different capacities including several important committees of the National Research Council. He is a representative of the American Medical Association in the World Medical Association.

ERNEST EDWARD IRONS, M.D.
PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION

Recently Dr. Irons was appointed by Mayor Kennelley of Chicago to the Board of Directors of the Municipal Tuberculosis Sanitarium, and he is now president of that board. Doctor Irons was elected to the Board of Trustees of the American Medical Association in 1941 and has served as Secretary of the Board since that time. In 1943 the House of Delegates of the Association requested a report on hospitals practicing medicine. During the year the Board of Trustees of the American Medical Association had a conference with a committee of the American Hospital Association to consider this question. The report of that conference included studies of plans in various portions of the United States particularly as they were concerned with abuses in relation to the practice of roentgenology and clinical pathology. This report was prepared by Dr. Ernest E. Irons and Dr. R. L. Sensenich. The importance of that statement cannot be overestimated. At a meeting of the American Medical Association in 1937 the principle was adopted that the subscriber's contract under any form of hospitalization insurance should exclude all medical service and that contract provisions should be limited exclusively to hospital facilities. The report prepared by Drs. Sensenich and Irons emphasized that fundamental principle. Until it is changed by the House of Delegates, it represents the policy of the American Medical Association. Dr. Irons has been for some time chairman of the Joint Committee on Medical Activities. The Association has in Dr. Irons a representative who will be recognized throughout the world as typical of American medicine from the scientific, professional, political and social points of view.

DISTINGUISHED SERVICE MEDAL

Once again the Distinguished Service Medal of the American Medical Association was awarded by the House of Delegates to a Chicago physician, Dr. Isaac Arthur Abt. His accomplishments are of such magnitude as to compare well with those of the other famous American physicians on whom this distinction has been bestowed. The recipient of the first medal, Dr. Rudolph Matas of New Orleans, now 88 years old, was present when the medal was conferred by President R. L. Sensenich on Dr. Abt. Dr. Abt was born in Wilmington, Ill., Dec. 18, 1867. After a preliminary medical course at Johns Hopkins University in 1889, he received his degree of Doctor of Medicine in 1891 from Chicago Medical College, now Northwestern University Medical School. He was thereafter an intern in Michael Reese Hospital from 1891 to 1893 and subsequently did graduate work in Vienna and Berlin. He served as professor of diseases of children in Northwestern University Woman's Medical School from 1897 to 1901 and as professor of diseases of children in Rush Medical College, 1902 to 1908. He then became professor of diseases of children at Northwestern University Medical School from 1909 until 1942, since which time he has been professor emeritus. His work included consulting positions in the Children's Memorial Hospital, the Sarah Morris Hospital, St. Luke's Hospital and Passavant Hospital. He held the presidency of the American Pediatric Society in 1926 and the American Academy of Pediatrics in 1930. He was president of the Chicago Medical Society in 1927 and of the American Association of Teachers of Diseases of Children in 1922. Dr. Abt has been known not only as an outstanding clinician but also as a great teacher. His contributions to the literature of his specialty include hundreds of articles and periodicals, a baby book called "The Baby's Food," published in 1917, and an autobiography called "The Baby Doctor" published in 1944. Outstanding was his "System of Pediatrics," an encyclopedic work of which he was editor. He was instrumental in 1910 in encouraging the founding of the *American Journal of Diseases of Children*. In the American Medical Association Dr. Abt served for many years, representing the Section on Diseases of Children in the House of Delegates. His contributions on reference committees of the House of Delegates were notable. In 1925 he presented to the House of Delegates a report on the methods of sale and promotion of proprietary infant foods which has served as a standard since that time. Thus the House of Delegates honored a true physician who combines in one personality the healer, the scientific diagnostician, the teacher, the leader and the citizen.

ISAAC ARTHUR ABT, M.D.
AWARDED DISTINGUISHED SERVICE MEDAL

ORGANOMERCURIAL ANTISEPTICS

The Council on Pharmacy and Chemistry recently published a report by Morton, North and Engley [1] that showed, according to the methods employed by these investigators, that commonly used mercurial antiseptics did not kill certain strains of virulent hemolytic streptococci in vivo. In presenting this report the Council said "The field of usefulness of organic mercurials should be explored, proved and defined. The proponents of these preparations should proceed seriously and diligently to this task." With commendable promptness the proponents of two brands of mercurial antiseptics have provided the Council with data from their laboratories. These reports, elsewhere in this issue, extend the observations of Morton, North and Engley. Although not all organisms are killed by mercurial antiseptics, virulence may be altered and the degree of infectivity lessened or practically abolished. It is gratifying that the challenge of the Council has been met so promptly. These reports help materially to define the field of usefulness and limitations of the organic mercurial compounds, and they further emphasize the need for critical appraisal of the methods used to assess the efficiency of antiseptics. The lesson to be learned from the data presented in the report of Morton and associates and in the reports of Brewer [2] and Powell [3] is that slight variations in technic, differences in test organisms, and differences in criteria of effectiveness lead to different conclusions regarding the antiseptic efficiency of the organomercurial compounds.

1. Morton, H. E.; North, L. L., and Engley, F. B., Jr.: The Bacteriostatic and Bactericidal Actions of Some Mercurial Compounds on Hemolytic Streptococci, J.A.M.A. **136**: 37 (Jan. 3) 1948.
2. Brewer, J. H.: Reduction of Infectivity of Certain Pathogenic Bacteria by "Mercurochrome," J.A.M.A., this issue, page
3. Powell, H. M.: Antibacterial Action of "Merthiolate" Against Hemolytic Streptococci, J.A.M.A., this issue, page.

ORGANIZATION SECTION

PROCEEDINGS OF THE CHICAGO SESSION

MINUTES OF THE ANNUAL SESSION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN CHICAGO, JUNE 21-25, 1948

HOUSE OF DELEGATES

First Meeting—Monday Morning, June 21

The House of Delegates convened in the Red Lacquer Room of the Palmer House, Chicago, and was called to order at 10:10 a. m. by the Speaker, Dr. R. W. Fouts.

Preliminary Report of the Reference Committee on Credentials

The Speaker appointed as tellers Dr. John W. Green, California, Chairman; Dr. E. Roger Samuel, Pennsylvania, and Dr. Scott Lord Smith, New York.

Dr. G. Henry Mundt, Chairman, stated that 160 delegates had registered and the Speaker, after requesting the tellers to prepare to distribute the ballots for the selection of the recipient of the Distinguished Service Award, declared the House duly constituted.

Roll Call

The Secretary called the roll at the request of the Speaker, and 165 delegates answered or after the call reported themselves as present.

Distinguished Service Award

Dr. E. L. Henderson, Chairman of the Board of Trustees, presented a report of the Board as follows:

The Committee on Distinguished Service Award of the American Medical Association submitted five names to the Board of Trustees.

In accordance with chapter VI, section 5, of the By-Laws, the Board has selected by ballot the following names for presentation to the House of Delegates in alphabetical order: Dr. Isaac Abt, Chicago; Dr. Alfred Blalock, Baltimore, and Dr. Seale Harris, Birmingham, Ala. Dr. Henderson, on request, read to the House information from "Who's Who" concerning Drs. Abt, Blalock and Harris.

The tellers spread the ballot and the Secretary announced that one hundred and fifty-nine votes had been cast, of which Dr. Abt received ninety-nine, Dr. Blalock twenty-six and Dr. Harris thirty-four.

The Speaker declared Dr. Isaac Abt, Chicago, who had received the majority of the votes cast, to be elected by the House of Delegates to receive the Distinguished Service Award of the American Medical Association.

Adoption of Proceedings of Interim Session in Cleveland, January 1948

On motion of Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, the proceedings of the interim session of the House of Delegates held in January 1948 were adopted as printed.

Address of Speaker, Dr. R. W. Fouts

The Vice Speaker, Dr. F. F. Borzell, Pennsylvania, presided while the Speaker of the House read his address, which was referred to the Reference Committee on Reports of Officers and which reads as follows:

Mr. Speaker, Members of the House of Delegates and Guests:

It is again my privilege to preside over the deliberations of an organization of distinguished men who have played and are continuing to play a significant part in shaping the destinies not only of medicine, but of many social activities throughout the world. Your contributions toward establishing policies for the American Medical Association have not only served this nation well, but have also provided a pattern for other organizations throughout the world. The leadership of American physicians in world organizations is quite significant. While these contributions cannot be measured by any known standards of values, they deserve the plaudits of thinking people.

As stated in some previous addresses, your Speaker believes that the function of his office is to assist in the conduct of the business of the House in a fair, unbiased and business-like manner at all times and to maintain the dignity becoming this distinguished office. This I have attempted to do. If at any time it has seemed that this was not the case, the error was due to oversight or lack of information rather than desire.

Some changes in the conduct of the affairs of the House that have been inaugurated the past few years appear to be working well and have served to expedite the business of our sessions. Some of these have already been incorporated in our Constitution and By-Laws and others will be proposed for adoption at this session. Some of the changes proposed at the interim session in Cleveland by the Special Committee to Expedite the Work of the House of Delegates will be in evidence at this session.

A resolution adopted at the Cleveland session in January provided that all reference committees be appointed sixty days prior to the convening of sessions and that the names of the appointees be published thirty days prior to the session. This poses somewhat of a problem for your Speaker. Sixty days ago, inquiry revealed that a number of the states had reported no delegates elected, and many others had reported only half of their quota. You will note from your Handbook that some states were unable to name their delegates at the time the Handbook went to press.

This condition made it impossible to give proper representation in the appointment of reference committees for this session. I do not see how this can be avoided in the future unless all state organizations revise their constitutions and by-laws and the respective delegates assume office on the same date, such as January 1 of each year. I believe that further consideration might well be given this question.

Each session of the House presents new problems. Of special significance at this time is the Blue Cross and voluntary insurance plans, the intern situation and the nurse problem. A special committee will report on the latter question at this meeting. The proposed selective draft of physicians appears to be settled, at least temporarily. I am confident that each member of this House will give due deliberation and consideration to all questions presented.

IN MEMORIAM

Each year new names are added to what is now a rather long list of colleagues who formerly served American medicine. The Vice Speaker will read the names of those who have departed from this life since our last annual session as follows (the dates following the names indicate years of service in the House or as officers of the Association):

Edward B. Angell, New York, 1908.
Francis R. Anthony, Missouri, 1907.
William E. Bannen, Wisconsin, 1916; 1929-1936.
Rupert L. Blue, President, 1915-1916.
George V. I. Brown, Milwaukee, Section on Stomatology, 1902; 1907; 1909-1916.
Curtis F. Burnam, Maryland, 1915.
William J. Carrington, Atlantic City, N. J., Vice-President, 1942-1943.
Arthur S. Chittenden, New York, 1926.
Frederic C. Conway, New York, 1939-1940.

George H. Curfman, Colorado, 1925; 1945-1946.
John Darrington, Mississippi, 1906-1907.
William Davis, Minnesota, 1903-1904.
Charles M. DeValin, U. S. Navy, 1924.
Edward C. Ellett, Tennessee, 1914; 1925-1926.
Thomas H. Farrell, New York, 1926.
Howard B. Garner, Michigan, 1905.
Alois B. Graham, Indianapolis, Section on Gastro-Enterology and Proctology, 1920-1921.
John H. Graves, California, 1921.
John A. Hawkins, Pennsylvania, 1916.
Barney J. Hein, Ohio, 1939-1947.
Charles H. Henninger, Pennsylvania, 1941-1944.
J. Newton Hunsberger, Pennsylvania, 1923-1943.
Ernest L. Hunt, Massachusetts, 1943.
Reid Hunt, Boston, Section on Pharmacology and Therapeutics, 1911-1912.
T. Henshaw Kelly, California, 1935.
Percy T. Magan, California, 1927-1930.
Deseum C. McKenney, Buffalo, N. Y., Section on Gastro-Enterology and Proctology, 1933-1935.
Samuel P. Mengel, Pennsylvania, 1924; 1929; 1931-1940.
Samuel Rush Miller, Tennessee, 1911-1912; 1916.
Fred T. Murphy, Massachusetts, 1911.
John H. Musser, Louisiana, 1928. Vice President, 1933-1934; Member, Council on Medical Education and Hospitals, 1934-1947.
J. Archer O'Reilly, St. Louis, Section on Orthopedic Surgery, 1931-1933; 1940-1947.
Julian Rawls, Virginia, 1941.
Auguste Rhu, Ohio, 1912.
Charles W. Roberts, Georgia, 1925; 1927-1928; 1932-1941. Member, Board of Trustees, 1941-1947.
George E. Shambaugh, Chicago, Section on Laryngology, Otology and Rhinology, 1916.
Frederic E. Sondern, New York, 1916-1921; 1932-1942.
Reginald J. H. Stroud, Arizona, 1919; 1930.
Holman Taylor, Texas, 1912-1914; 1920-1947; Fourth Vice President, 1917-1918; Member, Judicial Council, 1939-1942.
Clarence G. Toland, California, 1934-1935.
Gerald B. Webb, Colorado, 1920-1921.
Oliver W. Welch, Alabama, 1947.
Frederick W. Wilkerson, Alabama, 1920.
George F. Zinninger, Ohio, 1932-1933; 1937-1938.

The Speaker requested the members of the House to stand for a brief moment in silent tribute to the memory of these absentees, after which he continued reading his address.

REFERENCE COMMITTEES

Your Speaker believes that it is necessary to create three special reference committees: Executive Session, Medical Service and Prepayment Insurance, and Emergency Medical Service and requests authority to make such appointment.

On motion of Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried, the Speaker was given permission to appoint the three special reference committees he requested.

It has been found necessary to make some changes in committee appointments since publication. The personnel of all reference committees as appointed by the Speaker is as follows (the list includes the names of all those appointed by the Speaker at this time and later in the session):

SECTIONS AND SECTION WORK

Robertson Ward, Chairman, California.
A. S. Giordano, Indiana.
Leo G. Christian, Michigan.
Charles T. Stone, Section on Internal Medicine.
Edward L. Compere, Section on Orthopedic Surgery.

RULES AND ORDER OF BUSINESS

Herbert P. Ramsey, Chairman, District of Columbia.
Philip W. Morgan, Kansas.
James P. Wall, Mississippi.
Edward H. Weld, Illinois.
James P. Kerby, Utah.

MEDICAL EDUCATION

W. D. Stovall, Chairman, Wisconsin.
Joseph H. Howard, Connecticut.
Charles F. Strosnider, North Carolina.
J. D. McCarthy, Nebraska.
Joseph F. Londrigan, New Jersey.

LEGISLATION AND PUBLIC RELATIONS

Thomas A. McGoldrick, Chairman, New York.
George A. Unfug, Colorado.
Donald Cass, California.
Clark Bailey, Kentucky.
Charles L. Shafer, Pennsylvania.

HYGIENE AND PUBLIC HEALTH

Leland S. McKittrick, Chairman, Massachusetts.
H. Gordon MacLean, California.
James Beebe, Delaware.
Robert E. Schlueter, Missouri.
Cornelius T. Lehmann, Texas.

AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

Arthur J. Bedell, Chairman, Section on Ophthalmology.
James Q. Graves, Louisiana.
William F. Costello, New Jersey.
Howard R. Dudgeon, Texas.
Theodore H. Harwood, Vermont.

REPORTS OF OFFICERS

Allen H. Bunce, Chairman, Georgia.
George W. Kosmak, New York.
Louis M. Orr II, Florida.
Walter E. Vest, West Virginia.
Roland W. Stahr, Nevada.

REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Walter P. Anderton, Chairman, New York.
Thomas A. Foster, Maine.
Warren L. Allee, Missouri.
Jesse D. Hamer, Arizona.
Herman A. Lawson, Rhode Island.

CREDENTIALS

G. Henry Mundt, Chairman, Illinois.
Carl A. Lincke, Ohio.
H. B. Everett, Tennessee.
E. P. Flood, New York.
Raymond F. Peterson, Montana.

MISCELLANEOUS BUSINESS

Edwin S. Hamilton, Chairman, Illinois.
Thomas M. Brennan, New York.
Charles R. Rountree, Oklahoma.
Claude R. Keyport, Michigan.
John H. Moore, North Dakota.

EXECUTIVE SESSION

Charles H. Phifer, Chairman, Illinois.
George Braunlich, Iowa.
A. A. Walker, Alabama.
W. A. Coventry, Minnesota.
Raymond L. Zech, Washington.
Walter F. Donaldson, Pennsylvania.
George P. Johnston, Wyoming.

MEDICAL SERVICE AND PREPAYMENT INSURANCE

Henry B. Mulholland, Virginia.
H. G. Hamer, Indiana.
Stephen E. Gavin, Wisconsin.
D. A. Rhinehart, Arkansas.
L. Howard Schriver, Ohio.

EMERGENCY MEDICAL SERVICE

George E. Armstrong, Chairman, U. S. Army.
Hugh P. Smith, South Carolina.
Wyman D. Barrett, Michigan.
Morton D. Willcutts, U. S. Navy.
George A. Woodhouse, Ohio.
Raymond M. McKeown, Oregon.

TELLERS

John W. Green, Chairman, California.
E. Roger Samuel, Pennsylvania.
Scott Lord Smith, New York.

SERGEANTS AT ARMS

J. Stanley Kenney, Chairman, New York.
Hoyt B. Woolley, Idaho.
Fred H. Muller, Illinois.

The House approved of the appointments to reference committees as made by the Speaker on motion of Dr. Mather Pfeiffenberger, Illinois, seconded by Dr. Walter E. Vest, West Virginia, and carried.

POSTLUDE

As somewhat of a postlude may I be permitted to indulge in a few additional remarks?

There has been editorial comment in some medical journals and other periodicals and some papers have been written relative to the geriatric problem as it concerns the membership of this House. A resolution seeking to remedy this alleged affliction was presented on this floor. Whether or not this question merits consideration is not for me to state, but I would point out that, after a rather long period of observation, I fail to call to mind the name of any former or present member of this body whose enthusiasm has waned or whose efficiency has become less because of his years of experience in the service he has given. This is a question that cannot be settled by this body. The authority to act is vested solely in the respective state medical associations.

Speaking from a personal standpoint, I must state that to have served continuously in the House since the 1922 Session, the last ten years as Vice Speaker and Speaker, has been a most interesting and challenging experience. To have been chosen as your presiding officer for the past five sessions has in itself been a high honor, and I sincerely appreciate that honor. I have considered this position a serious responsibility, not only to this body and American medicine, but to medicine and the welfare of humankind throughout the world. Truly, American medicine sets this pace.

To have served with an outstanding group of loyal workers, such as comprise the membership of this House and the officers of the American Medical Association over these years, is a privilege that can be accorded only a few. I have been signally honored in this regard. It has seemed to me that all too few of the rank and file members of our profession interest themselves in the future of the welfare of their profession and only a comparative few carry the load.

It is not my purpose here to inveigh against the free riders who profit but do not serve, or even those who ride and drag

their feet—for we have our share of them—but it is my hope that in the future more of our members will join in carrying the load, to the everlasting glory of American medicine. The members of this House should be diligent, in season and out of season, in stimulating the interest of greater numbers of our profession to combat the economic and political implications of these times.

Our obligations are not discharged by just attending the sessions of this House and participating in its deliberations. The greatest service to American medicine, its purposes and ideals, may be rendered only by taking advantage of every opportunity to inform correctly our state association members on matters of national import as they develop in connection with our official duties. This can only mean that we must take time from our professional duties to study the economic and social aspects of the problems confronting our nation at this time. I bespeak your continuous participation.

Greeting to Dr. Olin West, Former Secretary

The Speaker resumed the chair and requested Dr. Olin West, former Secretary, to come to the platform. Dr. West was greeted with enthusiasm by the members of the House.

Address of President

The Speaker declared the next order of business to be the address of President Edward L. Bortz.

Dr. Bortz delivered the following address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker and Members of the House of Delegates:

The Centennial Celebration of the American Medical Association held one year ago created an opportunity to survey the major accomplishments and review the objectives of our Association. The first year of the second century has been characterized by vigorous activity on the part of the officials and staff of our Association, working in collaboration with officers of state and county medical societies and other groups to solve the medical problems facing the American public at the present time.

It is unnecessary to comment on the excellent state of the health of the nation, but let me briefly recall the steady advances of medical science in its various fields to extend the frontiers of knowledge which will lead to an even better control of the major afflictions of mankind. There is abundant evidence to certify the deep interest of the members of the profession in the details of medical practice. The broader social objectives of modern society are likewise under study.

THE AMERICAN MEDICAL ASSOCIATION IN ACTION

One is continually impressed and sometimes amazed at the vast amount of work which is being carried on by the members of the Board of Trustees. Their high sense of responsibility and steadfast devotion on the highest plane has placed the entire Association in their debt. Let me assure you that the weighty problems continually arising are being surveyed from every possible angle. The sole desideratum on which each problem is approached is that of a high quality of medical care for the American people. Our Board is no rubber stamp for any individual or minority pressure group. American medicine owes it a debt which will be difficult to repay.

To the Secretary, Dr. George F. Lull, and his able corps of assistants, the thanks of the Association are in order. To the Editor, Dr. Morris Fishbein, honor and credit are due for the wide extent of his interests and travels. Members of the central staff of the Association, a splendid group of workers, also deserve our gratitude.

I regret that time is not available to review adequately the great amount of significant work which is continuously being carried on by the various Councils. Each of these has a staff that has contributed in many important ways to further the cause of American medicine.

The Board of Trustees, through the Washington office and the Bureau of Legal Medicine and Legislation, is keeping strict watch on the various bills in Congress which bear on the nation's health. Only after critical analysis and a study of the ultimate ends to be served does the Board place its seal of approval. Our Board likewise has been diligent in its appraisal of innumerable plans for extending the insurance principle for financing medical care.

Our officers are playing a dominant role in the direction of the World Medical Association; we have always been in favor of the World Health Organization. Not only has the Association demonstrated its interest in international problems, but on the home front it is taking an active part in the formulation of a program for a higher level of health for our own population.

MEDICAL ECONOMICS

Many regional conferences have been held under the auspices of the Council on Medical Service. To these meetings representatives from a number of states have convened for the purpose of investigating problems of particular importance in each section of the nation. In this way, local questions are approached in a more intimate fashion. With the assistance of officials from American Medical Association headquarters, local officers have been able to clarify many of the vexing problems which are confronting the profession. Plans for medical care should be regarded as in an evolutionary phase. This must not be forgotten. A certain amount of time will be required to work out satisfactory principles. And, furthermore, it must be remembered that a program which would meet the requirements of a rural community would most likely not be applicable to densely populated areas.

Voluntary insurance plans have been surprisingly successful in winning the support of the American public. It would seem that the voluntary principle of medical insurance has won such widespread approval as to warrant universal participation in this program.

A study of medical service areas by Frank D. Dickinson, Ph.D., Director of the Bureau of Medical Economic Research, bids fair to be one of the great contributions in the field of medical economics. An analysis of the over-all medical needs of a given area compared with the personnel available is a method so sound and so logical that it is surprising that this approach has not heretofore been recognized. Such an analysis, carried on with attention to facts, should eliminate much of the controversy which has arisen because of inadequate statistical data or improper conclusions. Statistics, to have any value, must be factual as to origins and conclusions. During the coming months, a large mass of statistical data will be collected and studied. A milestone in the search for better ways of distributing medical care, and the means of payment therefor, will be reached if representatives of organized medicine and the governmental agencies working together may analyze the material and agree on the observations.

Organized medicine has never failed to support any method which logically pointed toward a higher level of health for the American people. Far from being reactionary in attitude, the past history of this Association indicates a spirit, interest and aggressiveness in the search for better medical care. Medicine, as a profession, is socially minded in action and outlook. The effectiveness of its activities may be found in the simple yardstick of the life span. Since the turn of the century, medical science has brought about an increase in the length of human life to an all time high of sixty-seven years. The monetary benefits to the consumers, since we are consumer-minded these days, are beyond calculation.

A few months ago, in February to be exact, the Brookings Institution, at the request of H. Alexander Smith, chairman of the Subcommittee on Health of the Senate Committee on Labor and Public Welfare, made an unbiased study of medical care. The report indicates that greater progress in the application of medical and sanitary science has been made under the voluntary system of medical care in our nation than can be found anywhere else in the world. And, the report continues, there is every reason to believe that these trends will carry on unabated under our present system. Certainly there is still much to be accomplished, but, as the Brookings Institution points out, it is highly probable that the intelligent cooperation of consumers and the medical profession will develop satisfactory arrangements for medical care which will remain subject to local control without administration by the national government.

During the past year the Committee on Nursing Problems, under the chairmanship of Dr. Thomas P. Murdock, has carried

on a number of far reaching investigations in this important field. The numerous conferences with representatives of nursing organizations have been productive. It is to be hoped that a more satisfactory nursing program may be evolved from the work of this Committee.

HEALTH EDUCATION

Organized medicine has long been interested in the philosophy of health. However, being so preoccupied with strictly scientific pursuits, the rank and file of the medical profession has failed to use its influence and participate actively in health educational programs. Health is not exclusively a matter of medical care. Environmental factors, which include food, shelter, type of work and similar activities, are of basic importance.

A modern health program requires the participation of leaders from all walks of life in each locality. Because of their professional experience and training in the field of health and scientific medicine, members of the medical profession should assume leadership in the formulation of a satisfactory health program in every community. With emphasis on prevention, prophylaxis and the maintenance of vigorous positive health, fewer patients should require hospital care and the level of health should be improved. Likewise, the costs should decline.

During the past year a number of important conferences have been arranged by the Bureau of Health Education of the Association. To these conferences have come educational and other civic leaders for the purpose of exploring ways and means for more satisfactory health educational programs. We are well on our way in the field of health education.

PREPAREDNESS

At the present time, the Congress of the United States has a number of bills in process bearing on the problem of medical care in the event of national emergency. Discriminatory legislation for drafting physicians has been vigorously opposed by the American Medical Association. Such legislation is unconstitutional and could not be sustained in court. Organized medicine is obligated to aid in the development of an over-all program which will adequately meet the needs of the entire population. The difficulty in drafting physicians and in placing the destiny of members of the medical profession in the hands of military authorities would bring a decided deficit of personnel to care for civilian requirements.

Last Saturday the Congress passed the draft. Congress, in deference to American medicine, deleted that objectionable item from the draft bill, and now where do we stand? That is one of the most important problems facing this House today. Gentlemen, Congress has deleted that section of the bill and the draft is coming on in ninety days, and the Medical Corps of the armed forces is going to need doctors. That is our responsibility. I want to say to you that we have had wholesome and sustained cooperation from the Surgeons General and their staffs all along the line. They have cooperated with the Board of Trustees and officials of the Association at all times. They have cooperated with our Council on National Emergency Medical Service, and now we must rise to the occasion and see that sufficient doctors are available on a voluntary basis. The alternative, gentlemen, is the draft.

The Council on National Emergency Medical Service, created by this House during the past year, under the able Chairman, Dr. James C. Sargent, has held a number of conferences with top ranking authorities in Washington. At these meetings the various phases of medical care in the event of national involvement have been discussed. It would seem that an Advisory Medical Board should be established to function with the National Security Resources Board at the top civilian level. Only on this plane will it be possible to determine the over-all needs of the nation and to make assignments accordingly. Past experience has demonstrated the vast amount of waste in personnel and equipment which occurs when nonmedical officials are given responsibility for allotment of medical resources. Hard-won experience should not be disregarded in the present hour of national concern.

Through the Council on National Emergency Medical Service we are well prepared to render a valuable service to the nation.

MEDICINE'S SOCIAL RELATIONSHIPS

The subject of public relations has received a great deal of attention during the past few years. The field is a broad one. Essentially it deals with human relationships, and the aim to be accomplished is a sympathetic understanding of the manifold activities which are being carried on by the medical profession. Preoccupation with restricted professional phases of practice with too little attention to the interpretation of the work we are carrying on has left large segments of the public uninformed about the objectives we are seeking to attain. To bring about a better rapport between the public and the profession, it is essential that we utilize every avenue of approach—every means for dissemination of information.

Members of the profession are being subjected to much adverse criticism because of the inability on the part of the public to obtain the services of a physician for night emergencies. Here is one problem that must be solved and solved promptly by physicians throughout the nation. County medical societies are in a position to improve the public relations of our profession at the local level by developing methods for taking care of night calls.

In the field of human relationship the Woman's Auxiliary is our most valuable asset. The response with which the splendid women have carried the message of American medicine into the various forums, clubs, associations and councils of lay groups is an important service to the country.

Press releases and other promotional work of similar nature in which Mr. Lawrence Rember and Mr. John Bach are engaged have kept the activities of the Association before the public. Accuracy and dignity in reporting the work of medical science has reached a new high during the past year, and medicine has won new adherents through the activities of these men.

From time to time it should prove edifying to survey the position of organized medicine in various areas of the nation. What is the present status of the relationship between Congress and the American Medical Association? How does organized medicine stand with the manufacturing groups, with labor and with educational institutions? Where lack of understanding exists, it is our responsibility to analyze the specific complaints and in a generous spirit endeavor to rationalize the differences.

A resourceful public relations program will reveal these troublesome issues and institute effective measures for their correction.

MEDICINE IN A FREE SOCIETY

In the past organized medicine has concerned itself principally with standards of education, extension of services and the promotion of research. The changing scene of civilization is bringing the people of various nations into closer contact and communication with one another. Isolationism is an outworn concept. Health is a topic of major interest which is international in scope.

In our favored land, leadership in medicine is essential if the full potentialities of modern medical science are to be realized. The scientific method in medicine has infinite possibilities for improving human beings. In fact, as Descartes many years ago stated, "If the human race is ever to improve materially, intellectually, and culturally, the science of medicine will perform that service."

The troubled world today is hoping for social stability. Citizens of all nations are longing to return to peaceful pursuits without the ominous threat of human destruction. It should not be necessary to descend to the barbarous rule of the jungle in quest of a better way of life. The members of the medical profession, schooled in the intricacies of the management of disease, also possess an insight into the inner emotional mechanisms of their fellow human beings. The physician intimately knows the hopes and fears and aspirations of those whom he serves. The man of medicine is a friend and counselor of his patients. In this sympathetic relationship he is a leader in his community. An organization of such leaders possesses the capacity, and has an unexcelled opportunity, to influence social trends in the direction of a higher level of health for community and nation.

In the atomic age, when a new chapter of civilization is being born, the medical profession should rise to its full stature

and exert its powerful influence in the formulation of a social program that will extend the benefits of medical science to the far corners of the world.

During the past year the American Medical Association has made an auspicious beginning in its second century. There is need for broad vision and the long view in planning a program for the future in order that our Association may maintain its position as a great organization dedicated to the lofty principle of a more worth while way of life for our fellow men.

Presentation of President-Elect

The Speaker presented to the House Dr. R. L. Sensenich, the President-Elect, who addressed the House as follows:

Mr. Speaker, Mr. President, Dr. West, Members of the House:

It is a bit difficult to take all these evidences of your kindly interest and your evident kindly feeling toward me and such respect as you have for the office of President-Elect of the Association.

Last year I made a suggestion that I thought the President-Elect probably should not take your time in addressing you, and a little later the committee formulated this matter into a rule. Now perhaps I might admit that maybe I suspected they were going to do that. At any rate, I am not going to take your time today.

I reminded the House at that time that you had much to do, much of importance. If I judge correctly, you have more to do this year, and I regret that in the future I can see no opportunity for relief. If medicine is going to continue to hold and to assume still further positions in leadership in those things in which medicine should be interested, yours will be the task of defining the policies, and those policies are sometimes not easy to define, a bit difficult to follow, in the midst of a social structure that sometimes is not kind to our point of view.

And, lastly, it needs a unanimous opinion and a definite willingness to get down and fight for the promotion of those policies. I am not going to take any of your time, but I wish to assure you, I hope and believe you have always felt, that I shall do, so far as it is humanly possible for me to do, the utmost in carrying out the policies that you define during my term of office.

Reports of Officers

REPORT OF BOARD OF TRUSTEES

Dr. E. L. Henderson, Chairman, presented the Report of the Board of Trustees as printed in the Handbook, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary, with the exception of the Report of the Council on National Emergency Medical Service, which was referred to the Reference Committee on Emergency Medical Service; the Report of the Committee on Rural Medical Service, which was referred to the Reference Committee on Medical Service and Prepayment Insurance, and the Statement on the National Need for Blood Transfusion, which was referred to the Reference Committee on Executive Session but later was taken from that Committee and referred to the Reference Committee on Miscellaneous Business. The mimeographed copy of the supplementary Report of the Council on National Emergency Medical Service, distributed with the Handbook was referred to the Reference Committee on Executive Session.

SUPPLEMENTARY REPORT OF BOARD OF TRUSTEES

Cooperation with the Secretary of the Interior

Dr. E. L. Henderson, Chairman, presented the following report, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary.

By invitation from the Secretary of the Interior, the Honorable J. A. Krug, the executive committee of the Board of Trustees and certain officers of the American Medical Association became an advisory committee to the Secretary and have been associated with him in the sending of teams of physicians to study health conditions in outlying portions of the United States Government, to give aid to physicians to improve quality of medical care to the indigent. During the latter half of 1947 and the first half of 1948 groups of physicians visited the Navajo Indians; also Alaska, Puerto Rico and the Virgin Islands.

The group to Alaska included clinicians from the staff of the Cook County Hospital in Chicago. Their report on medical conditions in Alaska was published in THE JOURNAL for Oct. 25, 1947. Favorable comment concerning their visit came from leading physicans and surgeons in Alaska, from the Commissioner of Health, from the government of Alaska and also from the medical society. So favorably was their visit considered that another group will be sent to Alaska during the latter half of 1948.

A team developed from Southwestern Medical College and Foundation in Dallas, including six physicians from Texas, visited the Navajo Indians. The report of their visit is published in THE JOURNAL for Dec. 13, 1947, page 981.

A medical mission under the leadership of Dr. Ernest E. Irons, Secretary of the Board of Trustees, visited Puerto Rico and the Virgin Islands. Their report was published in THE JOURNAL for April 10, 1948, page 979. Approval of this visit has come from the Government of Puerto Rico, and the medical society of Puerto Rico has specifically requested another group during the coming winter.

This cooperation with the Secretary of the Interior has been especially important in presenting to the Congress of the United States the medical conditions under these portions of the United States Government. A special request has come to visit the Indians in the Northwest, and a group is now being formed under the leadership of Dr. William F. Braasch to visit the Northwest Indians during the coming summer.

The Board of Trustees invites attention to the fact that this movement was stimulated through the office of the Secretary of the Interior, the Honorable J. A. Krug, that he requested as his advisory group the executive committee of the Board of Trustees of the American Medical Association and its officers and that the activities met with the complete approval of every one concerned.

This activity is reported to the House of Delegates for its consideration and for such recognition as it may wish to give.

World Medical Association

Dr. Henderson presented the following report, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

Since the last report on the World Medical Association was made to the House of Delegates in January, the Council of that Association has met in New York. The Council approved the selection of the location of the headquarters and secretariat at the New York Academy of Medicine, where suitable space has been obtained.

The Council elected Dr. Louis H. Bauer as Secretary-General, and he consented to serve on a part time basis. On his election as Secretary-General, he resigned from the Council of the World Medical Association and was replaced by Dr. E. L. Henderson.

The next meeting of the General Assembly was transferred from Prague, Czechoslovakia, to Geneva, Switzerland, and will be held Sept. 8-11, 1948. The Board of Trustees has designated Drs. E. L. Henderson and R. L. Sensenich as Delegates, Drs. E. E. Irons and Morris Fishbein as Alternate Delegates, and Dr. W. F. Braasch as observer, for this coming session.

Among the matters being considered and studied by the World Medical Association are the status of the physician; the standards of medical education; the methods of rating specialists; fraudulent advertising, and cult practice. It also is studying war crimes and the best methods of preventing recurrences; displaced physicians; graduate medical education; the various programs of social security, and the preparation of an international code of ethics.

It is hoped that a bulletin will be issued before the meeting of the next General Assembly. At that time plans will be adopted for a bulletin to be issued at regular intervals.

Also at the time of the meeting of the General Assembly there will be a meeting of the medical editors of the world. This meeting is being sponsored by the World Medical Association.

On a recent visit of the Council to the United States, the members were entertained in New York, Chicago, Minneapolis and the Mayo Clinic. It is believed that they acquired a good knowledge of how medicine is practiced in the United States and that a spirit of international understanding and good will was fostered.

As has been previously reported to you, the United States Committee is responsible for the entire cost of the upkeep of the secretariat and traveling expenses of the Council. This is necessary because of the financial condition of some national associations and the difficulty in transferring funds from one country to another. The funds of this committee are being raised by voluntary subscription from individual physicians, medical organizations, organizations allied to and serving medicine and other individuals and organizations.

All founder-sustaining members of the United States Committee will receive the bulletin of the World Medical Association and thus be kept informed of its activities.

To play a part in raising the standards of medicine and health throughout the world and to promote better international relations and world peace are certainly worth while and an aim to which we should all aspire. The Board of Trustees urges the support of the United States Committee by individual physicians and other medical organizations. No effort is too great to support the objectives of the World Medical Association.

Revision of National Health Program

Dr. Henderson presented the following report, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

The Board of Trustees has given consideration to the National Health Program of the Association and recommends revision of point 7, "Veterans' Needs for Hospital and Medical Care," which now reads:

> A program for national health should include the administration of medical care, including hospitalization, to all veterans, such medical care to be provided preferably by a physician of the veteran's choice, with payment by the Veterans Administration through a plan mutually agreed on between the state medical association and the Veterans Administration.

The revision suggested is:

> The veterans shall be entitled to the highest available quality of medical care, in accordance with existing law, and preferably in his home community with a physician and hospital of his own choice.

Reports of Committee to Study Conditions of General Practice and Committee on Nursing Problems

Dr. Henderson presented the following reports of the committee to Study Conditions of General Practice and the Committee on Nursing Problems, mimeographed copies of which had been handed each delegate as he registered; these were referred by the Speaker to the Reference Committee on Medical Service and Prepayment Insurance.

REPORT OF COMMITTEE TO STUDY CONDITIONS OF GENERAL PRACTICE

The House of Delegates at the Atlantic City Session in June 1947 approved the recommendation of the President, Dr. H. H. Shoulders, that the Board of Trustees appoint a special committee which could "(1) define the term 'general practitioner,' or 'general physician,' on a functional basis; (2) determine whether or not there is need for a large increase in the number of medical graduates and, if so, its extent; (3) study the present program of medical education and training, both undergraduate and postgraduate, to determine whether or not the content and administration of the program is properly adjusted to the present day needs of the people; (4) study the possibility and feasibility of utilizing smaller community hospitals in a program for the training of general practitioners and the possibility of approving such institutions for such training when a teaching program is properly organized and administered; (5) study the means by which communities in need of additional services may be aided; (6) study such other questions as the committee itself may determine to be necessary in arriving at sound conclusions concerning the entire field of medicine, and (7) propose a long range program designed to overcome present insufficiencies and to meet future needs."

In accordance with the action of the House of Delegates, the Board of Trustees appointed the Committee to Study Conditions of General Practice. The Committee has given careful consideration to the suggestions for its work which were outlined in President Shoulders recommendation and at this time submits the following report with respect to those seven proposals:

"(1) Define the term 'general practitioner.'"

A general practitioner is a legally qualified Doctor of Medicine who does not limit his practice to a particular field of medicine or surgery.

"(2) Determine whether or not there is need for a large increase in the number of medical graduates and, if so, its extent."

It is recommended that this matter be referred to the Council on Medical Education and Hospitals and the Bureau of Medical Economic Research, since both the Council and the Bureau already have accumulated considerable data regarding it.

"(3) Study the present program of medical education and training, both undergraduate and postgraduate, to determine whether or not the content and administration of the program is properly adjusted to the present day needs of the people."

The Committee commends the approved medical schools of this country for their interest in broadening the curriculum to prepare medical students for general practice. It encourages them to continue and to place increasing emphasis on postgraduate training with a view to establishing courses of at least two years of training which will fit the graduate for entering general practice. It also commends the American Board of Internal Medicine for broadening the opportunities for admission to its examinations, and recommends that similar action be taken by other specialty boards.

The Committee also recommends that every general hospital be organized so as to give the general practitioners adequate staff privileges and representation.

"(4) Study the possibility and feasibility of utilizing smaller community hospitals in a program for the training of general practitioners and the possibility of approving such institutions for such training when a teaching program is properly organized and administered."

The Committee is agreed that the smaller community hospitals not directly associated with medical schools, if properly supervised, would be excellent training institutions for general practitioners. It recommends that the Council on Medical Education and Hospitals proceed with the development of such a program.

"(5) Study the means by which communities in need of additional services may be aided."

In view of the fact that many studies are being carried on by agencies of the American Medical Association as well as by state agencies, the Committee believes that these activities should be continued by those agencies. The essential responsibility of each community for developing its own facilities, social and educational as well as medical, is recognized by students in this field. The Committee believes that the organization of integrated hospital facilities based on trade areas and population needs is essential to the development of good community medical service. It also recognizes that financial and technical aid is necessary in certain areas. This should be provided in such a way as to meet essential needs and preserve community control.

"(6) Study such other questions as the committee itself may determine to be necessary in arriving at sound conclusions concerning the entire field of medicine."

It is the opinion of the Committee that the American Medical Association should be the evaluating agent in the following fields: (1) medical education; (2) hospital standardization; (3) intern training, and (4) residency training. It is also the opinion of the Committee that there should be the closest possible liaison between the various American specialty boards and the American Medical Association. No other medical society or organization, as such, should be represented in this work.

The Committee is further of the opinion that courses in the basic sciences at the postgraduate level should be so coordinated that, while supplementing, they will not interfere with the program of training in clinical subjects.

The Committee believes that the hospital staff should be the sole deciding body as to who may practice medicine in the hospital either as a staff member or as having hospital privileges, since the certifying boards pass only on the ability of a man to perform work in his specialty.

The Committee also believes that the general practitioner does not show adequate interest in organized medicine, local, state or national, and that he should be urged to participate in all activities of organized medicine, both scientific and organizational.

"(7) Propose a long range program designed to overcome present insufficiencies and to meet future needs."

It is the feeling of the Committee that it is impossible rationally to formulate any long range program designed to overcome present insufficiencies and to meet future needs, unless this or a similar committee be continued to consider various phases of these problems as they may arise.

Respectfully submitted,

KARL A. MEYER, Chairman. PAUL B. MAGNUSON.
PAUL A. DAVIS. WALTER B. MARTIN.
REGINALD FITZ. STANLEY R. TRUMAN.
WINFRED B. HARM.

REPORT OF COMMITTEE ON NURSING PROBLEMS

Following the vote of the House of Delegates at the Annual Session in Atlantic City, Dr. E. L. Bortz, the President of the American Medical Association, appointed a committee of five to study the nursing problem in the United States. The members of the committee are Drs. Warren F. Draper, Howard K. Gray, Leland S. McKittrick, Donald W. Smelzer and Thomas P. Murdock. The Committee made a report of progress at the Interim Session in Cleveland in January 1948.

Your committee has gone into the matter exhaustively and has explored all of the available sources of information. During the course of the study, conferences have been held with representatives of the American Hospital Association, the American College of Physicians, the American College of Surgeons, the American Nurses Association and various other nurses' organizations.

We estimate that about 400,000 nurses will be required to care properly for the American people in 1949. This estimate is based on figures obtained from "Facts About Nursing, 1946 and 1947," and from the report of the President's Commission on Higher Education.

In 1940, 38,000 students were admitted to training schools; in 1941, 41,397; in 1942, 47,500; in 1943, 53,074; in 1944, 67,051; in 1945, 57,000, and in 1946, 30,899. It will be seen from this that during the period of the nurse cadet program the number was at an all time high. Immediately after the war was over the number dropped about 50 per cent. This may be explained on the basis of patriotism or stipend—probably the former.

It is estimated that there are about 342,737 nurses now available. A bulletin issued by the Women's Bureau of the U. S. Department of Labor indicates that 550,000 nurses will be required to care for the American people in 1960 if current standards of nursing are maintained. It also states that to accomplish this 50,000 nurses must be graduated each year from 1951 to 1960. The largest number ever graduated was 44,700 in 1947. This was the graduating class that entered training schools in 1944 with an admission number of 67,051. The report of the Bureau further states that "this is a realistic appraisal of possible attainment in a given period rather than what is ideally desirable." To obtain what is described as "ideally desirable" would require twice this number. These are staggering and alarming figures and tell American medicine a story of what is before it in the years to come.

There is one ray of hope before the committee. A questionnaire was sent, by the American Hospital Association, to 3,800 member hospitals in 1947. Two thousand, three hundred and seventy-six replied. Thirty-seven per cent of these replied that they did not need more nurses. The New England area was in greatest need.

The committee has studied the problem under three headings: (1) immediate relief, (2) proposed training for all grades of nurses in the future, and (3) the economic situation.

1. Regarding the first it has recommended that retired nurses, including married nurses, be requested to fill in during the emergency. Through the efforts of Dr. W. W. Bauer and with the generous cooperation of the National Broadcasting Company and the Advertising Council, a great deal of publicity has been given this subject. Many editorials have appeared in *Hygeia* and state and county medical journals stimulating doctors to aid in recruitment of student nurses and urging retired nurses to return to the fold. Personnel trained on the job have been advised and used to supplement nursing services. *Trained* practical nurses under supervision are being used. Hospital administrators have been requested to use nurses only in nursing duties and to assign other work to auxiliary personnel. It is the feeling of hospital administrators and directors of nursing schools that the situation has begun to show improvement and that it is easier now to obtain nurses in various grades than it was one year ago. The Hospital Career Campaign for the recruitment of student nurses for 1948 gives promise of an increased student nurse enrollment.

2. Under the second heading, which relates to the proposed training of all grades of nurses in the future, your Committee is prepared to make definite and concrete recommendations. We have investigated and studied carefully the question of bedside nursing and the required training for this grade of nurse. We recommend two main classes of nurses: (*A*) professional nurses, and (*B*) *trained* practical nurses.

(*A*) *Professional Nurse.*—This group is to be subdivided into (*a*) nurse educators and (*b*) clinical nurses.

(*a*) Nurse educators are to be those with collegiate training and others who have shown an aptitude for teaching, administration and supervisory positions. These are to fill the positions of directors of nursing schools, teachers, department and clinical supervisors, public health nurses, etc. The training for these nurses should be collegiate training before entering the nursing field or combined collegiate and nursing training.

(*b*) The clinical nurse is to be comparable to the present day general duty or private duty nurse. Selected clinical nurses with an aptitude and ability for teaching may well be considered for some of the subordinate teaching positions. We recognize that there are many duties to be assigned to this grade of nurse which could not be filled by the *trained* practical nurse. We recommend that the course of training for the clinical nurse be reduced to two years.

(*B*) *The Trained Practical Nurse.*—Your committee has underscored the word *trained*. Unfortunately it seems to the committee, the term "practical nurse" bears the implication of no training. However, the term has already been written into the statutes of several states and a change of the name would be difficult. At the same time the committee feels that the name is not of major significance, but does feel, however, that it is very important that uniform standards of training and duties be established across the country. For this group your committee recommends one year of training made up of three months theoretical and nine months practical training. This can be accomplished completely in a hospital, or the three months theoretical training may be taken under a department of education and the nine months training in an acceptable hospital. Your committee feels that this group of *trained* practical nurses, under proper supervision of professional nurses and medical staff, will be able to do much of the routine bedside nursing now being done by professional nurses, but that the more delicate and intricate duties must be left to the professional nurse. We believe that sufficient bedside nursing care can be obtained economically and efficiently if the professional nursing staff is augmented by *trained* practical nurses. Provision should be made, and credits allowed, in selected cases, toward training for advancement from the grade of *trained* practical nurse to the grade of clinical nurse.

3. The last or economic problem presents certain features which should be corrected. Your committee urges that steps be taken to provide social security and retirement plans for all nurses. This is advised from the business and moral points of view. We also recommend that hospitals adopt a definite personnel policy, for all institutional nurses, with a view toward making salaries, hours, sick leave and vacations comparable to other fields of endeavor for women with equivalent education and training.

The committee recommends that the cost of essential special nursing care, to the patient, be covered by prepayment nursing plans or be tied into prepayment hospital and medical plans, if practicable.

The committee feels that the nurses innocently erred in their action in Atlantic City in 1946 when they voted to have their

state organizations act as bargaining agents for them. They are members of a noble profession. They do not need bargaining agents. The term bargaining agent carries with it the implication to strike even though it is true that they have never gone on strike. Medical men, nurses, and other hospital employees have not the right to strike anywhere, any time. They are dealing with that most priceless possession—life itself. It is hoped that the nurses will correct this in the near future.

A permanent Conference Committee made up of representatives of the American Nurses Association and other nurse organizations, the American Hospital Association and the American Medical Association has been formed. The duties of this committee will be to study the problems common to all. Nursing problems are the most urgent and important at present. This committee might well be used to adjust any differences that any of the groups might have.

The committee wishes to thank Dr. E. L. Bortz, the President of the American Medical Association; Dr. Elmer Henderson and the Board of Trustees; Dr. Morris Fishbein, the Editor of THE JOURNAL, and the representatives of the American Hospital Association for their cooperation and aid in this study. The representatives of the various nurses' organizations have been very helpful to the committee. They are anxious to have this whole nursing problem solved and have cooperated fully. The committee expresses its gratitude for their aid.

And so we end, at least for the present, the study of the nursing problem and summarize it as follows:

1. It is estimated that about 400,000 nurses will be required to care for the American people in 1949. The committee feels that this can be accomplished.

2. Labor Department statistics indicate that about 550,000 nurses will be needed in 1960. To accomplish this about 50,000 nurses must be graduated each year between 1951 and 1960. This can be accomplished by the generous cooperation of all concerned.

3. The committee has proposed measures for the relief of the present situation and feels that much has been accomplished.

4. The committee recommends that changes be made in the present method of training nurses; that in the future nurses be made up of two main groups—the professional nurse and the *trained* practical nurse. The requirements, duties, and courses of training of both main groups have been outlined.

5. The economic situation has been reviewed and methods of correction suggested.

6. A permanent Conference Committee has been formed, made up of representatives of the American Nurses Association, the American Hospital Association and the American Medical Association.

7. The committee believes that this permanent Conference Committee will be the organization to implement your committee's recommendations and the recommendations that come from other interested groups.

Respectfully submitted,

THOMAS P. MURDOCK, Chairman.
WARREN F. DRAPER.
HOWARD K. GRAY.
LELAND S. MCKITTRICK.
DONALD W. SMELZER.

Supplementary Report of Committee on Rural Medical Service

Dr. F. S. Crockett, Indiana, presented the following supplementary report of the Committee on Rural Medical Service, which was referred to the Reference Committee on Medical Service and Prepayment Insurance:

The interest of farm people in their health problems is receiving increasingly widespread attention. In at least nineteen states, health councils on the state and community level have been organized under the stimulus and guidance of the medical profession. This cooperative activity of the medical profession with the laity in the promotion of public benefits will produce other advantages far beyond their immediate objectives.

The Board of Trustees has granted authority to this committee to employ a field secretary. The many existing organizations interested in promoting health measures need guidance in coordinating their activities in a common effort. In many states the assistance of this committee has been solicited. The members of this committee have given considerable time from their busy practices in furtherance of this objective. The demand has exceeded our limited ability. It is our hope that some one can be found able to represent us and with ample time to do a good job in portraying to our rural friends the active interest of the medical profession in the solution of their rural health problems.

The rural medical cooperative, as one form of prepaid medical care, should be organized to spread the costs of illness and hospitalization so as to prevent catastrophic, economic distress to its members. As a community effort to solve a local need without resort to governmental assistance when set up as a nonprofit insurance plan complying with the principles set down by the Council on Medical Service of the American Medical Association, it should then receive the support of the medical profession. Arrangements have been made for an early conference with representatives of the medical cooperatives to explore the possibility of mutual understanding of the problems involved. The Council on Medical Service and this committee will join in this meeting.

This committee was represented on the rural panel of the recent National Health Assembly at Washington and found opportunity to tell what the medical profession, through this committee, has accomplished in cooperation with the leaders of the major farm groups in helping our farm friends to help themselves.

F. S. CROCKETT, Chairman.
NORMAN H. GARDNER.
H. B. MULHOLLAND.
J. PAUL JONES.
ALLEN T. STEWART.
L. W. LARSON.
FRED A. HUMPHREY.
JAMES F. DOUGHTY.
CARLL S. MUNDY.
JAMES R. MILLER.
GEORGE F. LULL.

Proposed Amendment to By-Laws Re Committee on Rural Medical Service

Dr. Henderson presented the following statement regarding a proposed amendment to the By-Laws, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

The Board of Trustees feels that the Committee on Rural Medical Service is, according to the Constitution and By-Laws, and logically, a function of the Council on Medical Service. Because it is at present in the formative stage and the Board does not wish to interfere with its development, it is being continued in its present status, but its formative plans should be completed within the next year, at which time it should be incorporated in the Council.

It is suggested that the By-Laws be amended to read that in addition to the regular members there shall be one additional member, appointed by the Board of Trustees, who shall be Chairman of the Committee on Rural Medical Service.

Dr. Henderson asked permission to present in Executive Session a Supplementary Report of the Council on National Emergency Medical Service, which was granted.

Address of Rear Admiral C. A. Swanson (MC), U.S.N.

Dr. Henderson presented Rear Admiral C. A. Swanson (MC), United States Navy, who spoke as follows:

Honorable Chairman and Fellow Delegates: The present trend of world conditions has for some time been ominous and continues so. We hope and pray for the light of reason and common sense to dissipate the miasmic clouds of doubts, dogmas and differences, dependent on divergent political ideologies among nations. Meanwhile, 'every intelligent and thoughtful person in this nation would, I am sure, regard as foolhardy a failure on our part to be prepared for the worst. At no time in our history could we less afford to relax vigilance. It behooves civilian and military medicine, as never before, to go forward in thorough cooperation and complete understanding of the problems peculiar to both. Your thoughtful and sustained efforts toward arriving at workable solutions to these problems in the past have been deeply appreciated. Your continued help is sincerely solicited.

Your able support toward obtaining medical components at the highest level of planning, such as the National Security Resources Board, the Research and Development Board, the

Staff of the Joint Chiefs of Staff and the Munitions Board, will enable medical personnel to be more instrumental in formulating advance plans which include the distribution of medical care, as well as more widespread indoctrination in the expected possibilities as to required preparedness, anticipated duration and expected casualties.

The advent of new and fantastically more destructive weapons of war makes it mandatory that our ever deficient wealth of medical care be apportioned most carefully and planned with every caution. The Bureau of Medicine and Surgery is in wholehearted accord with the saving of medical officer manpower by such means as delayed "call-up" until actual time of need, deletion of protracted unnecessary military indoctrination, proper classification as to specialties, reasonable rotation between combat and rear areas of duty and rigid scrutiny of any possibility of overstaffing in any theater.

We fully concur in the deferment of induction of premedical, medical and scientific students, as well as medical professors and research scientists. This Bureau is, moreover, keenly and profoundly mindful of the absolute essentiality of taking into account the need of civilians in any plan dealing with the nation's medical resources. Any program which would be deficient on this score, would be fatally deficient.

The Medical Department of the Navy, we believe, has presently established an efficient and effective medical officer training program. We have at the present time 187 interns, 288 resident physicians, 99 medical officers undergoing instruction in civilian schools and naval hospitals. In addition to these, we have 30 medical officers undergoing instruction in naval medical specialties, such as aviation medicine, tropical medicine and submarine medicine. Our operating census of medical officers, exclusive of interns, is now 2,518. With your cooperation, the progress of this program has been excellent, but, unfortunately for the medical department, too many of these medical officers return at an early date to civilian life and the process begins again. To give you an idea of the cost of this type of program, we plan to expend, in the fiscal year 1949, $250,000 for courses in civilian schools and approximately $800,000 for the employment of civilian consultants to lead the training program and maintain high professional standards.

There are other facets to our problems which I desire to mention. Medical officers in the Navy are all too frequently considered numerically in relation to active duty personnel, whereas the medical department has many responsibilities not always related directly to active duty strength. Our medical officers afford a considerable measure of medical care to the dependents of service personnel, which number approximately 500,000. To visualize the portion of medical care that is afforded to these dependents, we now furnish about 1,250,000 office calls per year, with 40,000 home visits, 55,000 hospital admissions and 22,000 deliveries per year. We also afford care to approximately 50,000 fleet reserve and retired personnel. We furnish industrial medical care, plus treatment of emergency illnesses to about 340,000 civilian employees of the Naval Establishment. We have an average of approximately 4,000 Veterans Administration beneficiaries in our naval hospitals. We operate an outpatient clinic in Philadelphia for the Veterans Administration, affording about 125,000 treatments per year. The island natives of the Pacific Trust Territory, numbering 100,000, are also furnished medical care by our department. There are many other minor requirements demanding personnel with medical training, such as research, preventive medicine, medical preparedness planning and training of enlisted personnel. Furthermore, the nature of the assigned duties to isolated ships and stations often requires the presence of a medical officer despite the limited service personnel on board.

During the prolonged and at times heated debate with reference to the recently enacted Draft Law, there was considerable discussion and haggling over the ratio of doctors to the personnel under their care. With the sincerest kind of respect for those who were the leading persons concerned on this score, I must say that their views were not based on a sound understanding of the premises on which our ratio is based. Neither were they aware of the fact that the formula which may be applicable to the Army is not applicable to the Navy, and why this is true. We do not claim that we have too much work to do—that we have bitten off more than we can chew. We want to do all the work that we are doing and more—and by so doing we make a better medical department. It is better for those who comprise the medical department and it is better for the personnel of the Navy and other personnel which it serves.

Gentlemen, I point out the foregoing details so that you may be more thoroughly informed of the full picture within the service. The Navy, of which I have the honor to be Surgeon General, is the nation's Navy. Those whose lot it now is to guide the destinies of the Medical Department of the Navy realize that this nation must go forward if it is to survive. There is but one alternative—that is to go backward—to decline and fall. The armed forces must go forward with the nation. What is true for a whole organization is equally true for a component part of that organization. Therefore, the medical departments of the armed forces must keep pace not only with the progress of the military or naval forces, of which they are an important part—indeed, a vitally essential part—but with civilian medicine as well. And I want to say that not only do we have a responsibility toward civilian medicine, but civilian medicine has a real and solemn responsibility toward us. The Draft Act has passed. To what extent its language will be interpreted to provide for the drafting of doctors is still a moot question. I regret that the drafting of doctors should be necessary. The thought was distasteful to many—it was distasteful to me—but as head of an organization whose paramount mission is the protection and preservation of the health and the treatment of disease and injury, of members of the Navy and Marine Corps and their dependents, I am, of course, acutely aware of the absolute necessity for an adequate number of doctors. Here is where organized civilian medicine, under the care and able leadership of the American Medical Association, comes in. If American medicine were so organized that it could guarantee the armed services all the doctors needed, and the collaboration of civilian and military medicine were what it should be, the drafting of doctors need never come up. I hope that American medicine and the medical departments of the armed services are so organized and that its organization and rapport are such as to make this desideratum realizable. To the end that this may be accomplished, I want humbly to ask the offices of this leading agency of American medicine to come to our aid in this our hour of desperate need.

Address of Dr. R. Scott Stevenson

Dr. Henderson presented Dr. R. Scott Stevenson, London, England, who presented the following address:

MESSAGE FROM THE BRITISH MEDICAL ASSOCIATION

I am very glad to have the privilege and pleasure of conveying to you, at the request of the British Medical Association, most friendly greetings from the profession in Britain, and of expressing the warm thanks of the British Medical Association for the encouragement which it has received from your sympathy and good wishes in its recent struggle against the threat of state domination of medicine. I believe that you share our view that the conversion of medical practitioners into a corps of salaried medical officials, employed by the State, would be against the best interests of our profession and against the best interests of all whom it is the privilege of our profession to serve. You may therefore feel that our successful fight to prevent the new Health Service Act from being used as a means of introducing a whole time state salaried service merits your commendation and that we have gained a victory for freedom which is of importance to the profession, not only in Britain, but wherever freedom is prized. We have certainly been able to provide an interesting demonstration of the power of a *united* profession to force a change of mind in the most obstinate and bellicose of politicians.

In Britain we are short of professional personnel, buildings and equipment, and many years must pass before our new health service can become fully effective. You will no doubt watch its development with keen interest. The active participation of your Association in the proceedings of the World Medical Association is a source of great satisfaction to us in Britain, and we hope that both medical science and medical administration may benefit from ever closer ties between the doctors of our two countries.

I bring you from the British Medical Association most cordial wishes for the success of your present deliberations and for the continued prosperity of the American Medical Association in the years to come.

Address of Dr. H. B. Washburn, St. Paul

Dr. Henderson presented Dr. H. B. Washburn, St. Paul, President of the American Dental Association, who addressed the House as follows:

MUTUAL COOPERATION

AMERICAN DENTAL ASSOCIATION OFFICIALLY OPPOSED TO UNDESIRABLE FEDERAL PROGRAMS JUST AS MUCH AS IS THE AMERICAN MEDICAL ASSOCIATION

Our program of approach is based on policy of having ready, when we oppose, something which we think is better. Mere opposition through criticism is, in our opinion, a good way to get into the bad graces of people in and around Congress.

In my interview with President Truman I stressed the need of our knowing about federal health plans right from the beginning, rather than after they are well under way or actually before Congress. He agreed that our experience and training in the front line of health service should make our assistance in planning such measures mandatory.

This interesting idea has come out of my several conferences with the President and other high officials in Washington. They want able men to represent us, medical and dental, but too often the men we delegate have become slightly arrogant in their attitudes because of their professional success. Also, such men, it is pointed out, are high fee men, and for them to consider honestly and justly the plight of persons for whom any federal health measure is being considered seems to be difficult. The suggestion is made that perhaps we are overlooking the help that we need by not selecting men who practice in small communities, and especially some who practice in localities of widely separated population.

Let us not forget that both associations have committees known as medical dental relations; suppose we try to give them more to do.

There seems to be some truth in the ideas one hears going over the country as your president and I have this past year, that with our high membership of persons all trained in some branch of the health service we should be closer knit, each within our own association and between the two associations. In other words, we are not making the most of this splendid membership. Why not give a little more thought to this angle and, with the public's welfare first in our thinking, close ranks and make a militant approach to the problems that our political brethren are so anxious to solve for us, and in too many cases without any help from us.

Dr. Arthur J. Bedell, Section on Ophthalmology, moved that the House follow the suggestion of the Speaker that the Reference Committee on Executive Session meet and hold deliberations in executive session. The motion was seconded by Dr. H. B. Everett, Tennessee, and carried.

After the Speaker announced that it was his opinion that all matters referring to the Red Cross Blood Bank should naturally fall to the Reference Committee an Emegency Medical Service, it was moved by Dr. Charles H. Phifer, Illinois, seconded by Dr. H. B. Everett, Tennessee, and carried, that the Reference Committee on Emergency Medical Service conduct its hearings in executive session.

REPORT OF SECRETARY

Dr. George F. Lull, Secretary, presented the report of the secretary as printed in the Handbook and then read a statement as follows:

LABOR SITUATION

The changed process by which THE JOURNAL is now being produced, and the changed appearance of the Handbook of the House of Delegates and of the program of the Scientific Assembly, are the result of a work stoppage in the composing room of the printing plant of the Association. This work stoppage has been in effect officially since March 8, but actually since shortly after the first of the year. This work stoppage is not, as implied by the two letters sent to each of you by the union affected, due to the truculence and antiunion attitude of your headquarters officials but is a symptom of a condition that unfortunately is common in the Chicago area, both in the newspaper and in the so-called job or publishing fields of the printing industry. This condition is not of our making, nor is it of the making of the newspapers or of the job printers of Chicago.

A brief statement of the history and background of this dispute, of our printing operations and of our relations with all the printing craft unions seems indicated.

In the issuance of our publications the Association has as employees members of the following unions: (1) Chicago Typographical Union no. 16, a component member of the International Typographical Union; this union has jurisdiction over our composing room; (2) the Chicago Stereotypers' Union no. 4, a component member of the International Stereotypers' and Electrotypers' Union; (3) Chicago Printing Pressmen's Union no. 3, subordinate to the International Printing Pressmen and Assistants' Union of North America; (4) Franklin Union no. 4, affiliated with the International Printing Pressmen and Assistants' Union of North America; (5) Chicago Paper Handlers' Union, Local no. 2, an affiliate of the International Printing Pressmen and Assistants Union of North America; (6) Bookbinders' and Paper Cutters' Union of Chicago, no. 8, a member of International Brotherhood of Bookbinders; (7) Bindery and Specialty Workers' Union, no. 182 (so-called miscellaneous bookbinders' help), affiliated with the International Brotherhood of Bookbinders; (8) Bindery Women's Union, no. 30, affiliated with the International Brotherhood of Bookbinders, and, finally, (9) Chicago Mailers' Union no. 2, affiliated with the International Typographical Union. These various unions admittedly differ in the skills required in the performance of their duties, and over the years certain monetary differentials in their compensation have been generally recognized, though obviously this is an extremely delicate point. In any event, any disturbance in these differentials is apt to cause upheavals in the industry. Possibly, and at least in practice, the highest scale of wages is paid to the so-called compositors, the union that has written the two letters to you, to the pressmen and to the stereotypers. Their scales are, for practical purposes, roughly equivalent.

Let me emphasize, then, that the unions with which we deal are affiliated with four different international unions—the International Typographical Union, the International Printing Pressmen and Assistants' Union of North America, the International Brotherhood of Bookbinders and the International Stereotypers' and Electrotypers' Union. Now traditionally the job or commercial printing industry in Chicago has been dealing through a trade association with these unions on the basis of contracts of a year or more duration. Our contracts with all of these unions expired as of Dec. 31, 1947.

Shortly after the enactment of the Taft-Hartley Act in July 1947, the International Typographical Union in convention promulgated a policy that forbade its local unions from entering into contracts of any specified term with employers, attempted to impose unilateral conditions of employment on employers terminable in effect on the will of the union, and was designed to effect certain conditions of employment made unlawful by the new law, such as continuance of the closed shop and the refusal to execute so-called struck work. The other international unions indicated and followed a policy of complying with the new law. Before Jan. 1, 1948, The Franklin Association of Chicago, which is a trade association of employers that concludes contracts with the unions that are binding in the Chicago area, concluded contracts with the several press and bindery unions, strictly in compliance with the law and calling for a maximum raise in the weekly wage scale of $6. These unions have honorably and loyally abided by their contractural commitments. The International Typographical Union, particularly its local representing the compositors, refused to conclude any lawful agreement and prior to March 27 or 28, 1948, insisted on a unilateral arrangement that was,

in the opinion of the industry, unlawful and unconscionably onerous. Without making this statement too long, suffice it to say that because of the failure of the newspaper publishers to comply with the conditions, Chicago Typographical Union no. 16, on Nov. 24, 1947 struck the Chicago newspapers. They are still on strike.

Meanwhile, the job printers in Chicago continue to negotiate with this union. The union continued to work in job shops after Jan. 1, 1948 on the expiration of their contract, but beginning Jan. 16, 1948 by what in effect was central direction, the job printers refused to work overtime, and a series of crippling slowdowns occurred. If an employer agreed to operate under the unilateral conditions dictated by the union, which included a basic weekly scale of $95 for a thirty-six and one-fourth hour work week (an increase of $14.89 a week over the scale called for in the expired contract), overtime work was permitted, all the help was supplied that the employer required and full production was assured. If an employer refused to bow, operating conditions might at any time become chaotic and did so become in many plants for extended periods of time. Conditions in the composing rooms of Chicago rapidly became worse in February. In late February the President of the International Typographical Union, Mr. Woodruff Randolph, told the job printing employers of Chicago in an address to a meeting of the members of the Franklin Association that he planned no strike in Chicago but that unless the union proposals were acceded to there would be chaos in Chicago printing plants. During the week ending Monday noon, March 8, no work of any description was forwarded from the composing room of the Association to the stereotyping room of the Association and it became a foregone conclusion that THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for March 13 would not be issued on time, since without type from the composing room there obviously could be no stereotyping, no press work, no bindery work and no mailing. The Association had no rational alternative but to close its composing room until conditions could be restored to normal. This course had been adopted beginning March 3 by practically all of the larger printer employers in the Chicago area because of slowdowns and the failure of printing employees to execute work. As can be seen, the American Medical Association was not alone in this move—it was in fact late in the move, and by the end of March 10 job composing rooms employing over 2,000 printers were closed.

The situation city wide now stands practically as it was March 10. About 1,500 men on the newspapers and about 1,600 to 2,000 men (figures are not exactly determinable because of job transfers to other towns and other shops) in the job shops are out of work. It is difficult to tell the exact number.

On March 27 a federal judge in Indianapolis issued an injunction which had the effect of inducing the International Typographical Union to rescind the no-contract policy previously issued to its local unions. Promptly thereafter the Chicago job printers reopened negotiations with the union and met with the union on the average of twice a week during April and May. A legal contract was offered the union providing a weekly wage increase of $9.29 for a fifteen month term (precisely what was accepted by the union in New York City). The Union, however, has rejected the raise and apparently intends to force a settlement somewhere near a $14.89 a week increase. The employers have offered a weekly scale of $89.40. The Union wants $95. So far as the American Medical Association is concerned, any extension of the $89.40 means a corresponding increase to the other printing craft unions. When the dispute will be settled no one can presently foresee. The scale committee of the union and the employers are meeting Tuesday morning, June 22, and possibly a settlement may ensue within the near future.

THE JOURNAL has continued publication mainly through the use of the Vari-Type process. I must emphasize that that substitute process could not have eventuated into a journal without the active and loyal help and cooperation of all our other union employees and that in the view of the employees of the other eight printing craft unions and of their unions neither the American Medical Association nor the other job printing employers of Chicago are antiunion or out to destroy the union movement. In fact, relations with those unions are most cordial. After all, let us not be confused. We have at the Association about 300 union employees, about 230 are now working, are walking through picket lines and are, I am sure, proud to be employees of the American Medical Association.

I desire to express the pride and satisfaction that the Board has, that in spite of the difficulties encountered, which difficulties are beyond all our previous experience in our printing operations, essential printing operations at headquarters have been carried on and our publications still are being issued.

NOMINATIONS FOR AFFILIATE AND HONORARY FELLOWS

AFFILIATE FELLOWS

The Secretary, Dr. George F. Lull, presented nominations for Affiliate Fellowship which were referred to the Council on Scientific Assembly for recommendation.

HONORARY FELLOWS

Dr. Lull also presented a list of nominations for Honorary Fellowship and was informed that since there was a question of suspending the By-Laws this matter would have to be introduced under New Business and not acted on until tomorrow, but that at this time the applications should be referred to the Council on Scientific Assembly for recommendation. They were so referred.

INTRODUCTION OF ASSISTANT SECRETARY, DR. ERNEST B. HOWARD

Dr. Lull introduced to the House the Assistant Secretary, Dr. Ernest B. Howard, who spoke as follows:

Mr. Speaker, Members of the House: I would simply like to take this opportunity to tell you what an honor it is to me to be a member of your headquarters staff and to assure you that I shall do everything in my power to carry out the responsibilities.

Report of Committee on Intern Placements

Dr. William Bates, Chairman, presented the following report, which was referred to the Reference Committee on Medical Education:

The Committee on Intern Placements was appointed by the Speaker of the House after the last meeting of the House of Delegates in January 1948. The appointment was the result of a resolution from New Jersey presented by Dr. Hilton Read of Atlantic City, and modified by the Reference Committee to read:

WHEREAS, The number of positions for intern training in approved hospitals exceeds by large numbers the available interns; and

WHEREAS, It is becoming increasingly difficult each year for approved hospitals and those hospitals desiring approval to secure interns from approved medical schools; therefore be it

Resolved, That the Speaker of this House appoint a special Committee on Intern Placement consisting of five members, including two general practitioners, (*a*) to study the supply and distribution of interns with particular emphasis on furthering interest in general practice, (*b*) to cooperate with the Council on Medical Education and Hospitals and other interested agencies in an effort to arrive at a method leading to a better distribution of interns and (*c*) to present a report of its findings and recommendations to this House at the annual session in 1948.

Since the appointment, members of the committee have consulted teachers, medical school and hospital authorities, interns, residents and many practicing physicians.

On Saturday, June 19, 1948, this committee met with the Joint Intern Committee representing the Association of American Medical Colleges, the American Medical Association, and the Catholic and American Protestant Hospital Associations, and three representatives of the Council on Medical Education and Hospitals. Besides the members of this committee there were present:

Father John Barrett—President-Elect of Catholic Hospital Association of United States and Canada.

F. Stanley Howe—Director, Orange Memorial Hospital; Chairman American Hospital Association Committee on Internships.

Charles T. Dolezal, M.D.—Secretary, Council on Professional Practices of the American Hospital Association.

J. A. Curran, M.D.—President, Long Island College of Medicine; Chairman of the Committee on Internships and Residencies of the Association of American Medical Colleges.

Council on Medical Education and Hospitals: Donald G. Anderson, M.D., Secretary; Victor Johnson, M.D.; E. H. Leveroos, M.D.

As a result of these deliberations we wish to present the following recommendations:

We recommend that hospitals and medical schools which do not cooperate with the Plan for Uniform Intern Placement be reported to the Council on Medical Education and Hospitals of the American Medical Association for investigation and appropriate action.

(Plan for the Year 1948-1949 for Internships Beginning July 1, 1949:
1. Applications and credentials to be submitted only through the dean's office to hospitals, with the date for filing applications and release of credentials by the medical schools set at Oct. 15, 1948. Credentials ordinarily will consist of an executed application blank and a letter from the dean but do not preclude such letters from members of the faculty as they may wish to write, unsolicited by the candidate.
2. Applicants may visit hospitals and be interviewed by hospital intern committees, but the hospital administration shall not commit the hospital or obligate the applicant, or potential applicants, before Nov. 15, 1948.
3. No intern appointments shall be made prior to Nov. 15, 1948 from applicants who are members of the senior class in medical school. Hospitals may decline an applicant at any time.
4. Applicants shall accept or reject hospital appointments before midnight of Nov. 18, 1948.
5. These regulations shall apply only to undergraduate medical students who have not completed the fourth year of their medical school course.)
(Contemplated Changes in 1948 Uniform Intern Placement Plan. The Committee moved that item 3 of the plan be amended to read:
"No intern appointments shall be tendered prior to Nov. 15, 1948 to applicants who are members of the senior class in medical schools. Notice by telegram is preferable. Hospitals may decline an applicant at any time."
Also that item 4 of the plan be changed to read:
"Applicants shall send acceptances or rejections of appointments so that they are received at the hospitals by midnight of Nov. 18, 1948; but commitments by applicants shall not be required prior to that time.")

Secondly, in the interest of promoting general practice and better to prepare a physician to choose a specialty, we recommend that all specialty boards require at least one year of approved rotating internship before allowing a physician to start his specialty training.

Thirdly, we recommend that an approved rotating internship shall be of one or two years' duration; should include an educational training program in medicine, both organic and functional; obstetrics, pediatrics and surgery with especial emphasis on diagnosis under the supervision of a qualified educational director of interns. More of these internships should be for a term of two years. The specialty boards should be requested to give credit toward certification for work in their respective fields during the second year.

Fourthly, we recommend that hospitals at present approved for internship should be reappraised on the basis of their educational program for interns.

Fifth, we recommend that any hospital which does not provide an adequate educational training program for interns may be approved for general residencies for graduates who have completed an approved, rotating internship of at least one year.

Lastly, being mindful of the difficulties involved because of the differences in medical school requirements, the differences in state laws, the differences in requirements of specialty boards and the differences in hospital regulations and organizations, we recommend that the Council on Medical Education and Hospitals be and it is hereby instructed immediately to begin implementaton of these recommendations and to report at the next session of the House of Delegates the progress toward accomplishment of each of these recommendations.

Respectfully submitted,

WILLIAM BATES, Chairman.
DEERING G. SMITH.
MATHER P. PFEIFFENBERGER.
B. R. KIRKLIN.
WILBURT C. DAVISON.

REPORT OF JUDICIAL COUNCIL

Dr. E. R. Cunniffe, Chairman, presented the report of the Judicial Council as printed in the Handbook, and a proposed Revision of the Principles of Medical Ethics, a mimeographed copy of which had been sent each delegate.

The Speaker ruled that the House would consider the proposed revision of the Principles of Medical Ethics section by section as a Committee of the Whole, after which the House, sitting as a Committee of the Whole, considered the proposed revision section by section, recommending amendments to certain sections.

The House as a Committee of the Whole recessed at 1 p. m., to reconvene at 2:30 p. m.

Monday Afternoon, June 21

The House as a Committee of the Whole reconvened at 2:30 p. m., with the Speaker, Dr. R. W. Fouts, presiding.

Dr. E. R. Cunniffe continued with the reading of the proposed revision of the Principles of Medical Ethics, and the Committee of the Whole, after considering each section, voted to recommit the entire proposed revision to the Judicial Council, on motion of Dr. Lowell S. Goin, California, seconded by Dr. Mather Pfeiffenberger, Illinois, and carried.

Report of Joint Committee for the Coordination of Medical Activities

Dr. Ernest E. Irons, Chairman, presented the following report of the Joint Committee for the Coordination of Medical Activities, a mimeographed copy of which had been given each delegate:

Four meetings of the Joint Committee for the Coordination of Medical Activities have been held since the last report was made to the House of Delegates at the Atlantic City Session. Matters discussed at these meetings have followed the general trend of medical affairs as they have developed during the year. The Joint Committee is a forum in which the opinions and ideas of its members, who represent a wide variety of interests in the medical field, are discussed freely and without prejudice.

Reports of the discussions at the meetings have been published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and it is evident from correspondence received that these reports are widely read.

The Joint Committee is made up of representatives of the American Medical Association, the American College of Physicians and the American College of Surgeons, and of liaison members who represent the following organizations:

Advisory Board for Medical Specialties.
American Dental Association.
American Hospital Association.
American Pharmaceutical Association.
American Red Cross.
Association of American Medical Colleges.
Catholic Hospital Association.
Federal Security Agency.
Federation of State Medical Boards.
Office of the Surgeon General, U. S. Army.
Bureau of Medicine and Surgery, U. S. Navy.
U. S. Public Health Service.
Veterans Administration.

During the past year the committee has discussed such diverse questions as the Hospital Survey and Construction Program, the status now and in the future of the general practitioner, nursing problems, the problems of medical service in rural areas, the World Medical Association, graduate education for Army and Navy medical officers, the desirability of a uniform Pharmacy Practice Act, the various phases of the American Red Cross Blood Bank Program, disposal of war surplus supplies and, recently, questions arising from the National Conference on Family Life, the National Health Assembly and the medical implications of the reorganization of federal agencies.

It is not the purpose of the Joint Committee to make official pronouncements on any of the matters which it discusses, nor, without specific authorization, to commit the organizations which its members represent to any course of action. Its chief function is to give opportunity for exchange of information and ideas in the varied fields of medical interest, and thus in most instances to arrive at a common understanding.

Respectfully submitted for the Committee,

ERNEST E. IRONS, Chairman.

REPORT AND SUPPLEMENTARY REPORT OF COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

Dr. H. G. Weiskotten, Chairman, presented the Report of the Council on Medical Education and Hospitals as printed in the Handbook and the following Supplementary Report, which were referred to the Reference Committee on Medical Education:

To the Members of the House of Delegates of the American Medical Association:

The Council on Medical Education and Hospitals respectfully directs the attention of the House of Delegates to the functions of the Council as set forth in the By-Laws of the American Medical Association, which state under Chapter IX, Section 2,

that "The functions of the Council on Medical Education and Hospitals shall be:

"1. To investigate conditions of medical education including premedical, undergraduate and graduate medical education, hospitals and associated subjects and to suggest means and methods by which the same may be improved;

"2. To endeavor to further the realization of such suggestions as may be approved by the House of Delegates."

In the past, from time to time, resolutions have been introduced into the House of Delegates providing for the Council's conditioning its approval of the educational programs of hospitals and medical schools on the financial arrangements that such institutions enter into with the members of their professional staffs.

The Council is of the belief that it is not the agency of the American Medical Association to pass on such matters. The Council has been advised that conditioning approval of educational programs of hospitals and medical schools on any other basis than educational standards might be interpreted as illegal by the federal courts.

Respectfully submitted,

H. G. Weiskotten, Chairman.
Harvey B. Stone.
Reginald Fitz.
Russell L. Haden.
William S. Middleton.
Virgil P. Sydenstricker.
Victor Johnson.
Donald G. Anderson, Secretary.

REPORT AND SUPPLEMENTARY REPORT OF COUNCIL ON MEDICAL SERVICE

Dr. James R. McVay, Chairman, presented the Report of the Council on Medical Service as printed in the Handbook and the following Supplementary Report, which were referred to the Referencee Committee on Medical Service and Prepayment Insurance:

REPORT OF THE MEDICAL CARE SECTION OF THE NATIONAL HEALTH ASSEMBLY IN WASHINGTON MAY 1-4, 1948

American medicine came out of the recent National Health Assembly in Washington with added friends, prestige, influence and stature. Complete failure on the part of those who desired to force a recommendation for a national sickness compulsory insurance plan through the Assembly placed the American Medical Association and the state and county medical societies in a position to make available the benefits of the Ten Point National Health Program for the health of the American people already outlined by the House of Delegates of the American Medical Association. Those favoring the compulsory program, which would bind both patient and physician in government regulation and red tape, concentrated their efforts on the Medical Care Section, one of the fourteen sections of the Assembly.

Their failure was due to the action taken by the Steering Committee of the Medical Care Section among whose members were Dr. James R. McVay and Dr. Thomas A. McGoldrick.

The Steering Committee made the following recommendations, which were adopted by the section, but as there was no form of voting on resolutions and recommendations, the delegates were not committed officially in any way:

1. Adequate medical service for prevention of illness, care and relief of sickness and promotion of a high level of physical, mental and social health should be available to all without regard to race, color, creed, residence or economic status.

2. The principle of contributory health insurance should be the basic method of financing medical care for the large majority of the American people, in order to remove the burden of unpredictable sickness costs, abolish the economic barrier to adequate medical services and avoid the *indignities* of a "means test."

3. Health insurance should be accompanied by such use of tax resources as may be necessary to provide additional (*a*) services to persons or groups for whom special public responsibility is acknowledged and (*b*) services not available under prepayment or insurance.

4. Voluntary prepayment group health plans, embodying group practice and providing comprehensive service, offer to their members the best of modern medical care. Such plans, furthermore, are the best available means at this time of bringing about improved distribution of medical care, particularly in rural areas.

5. The people have the right to establish voluntary insurance plans on a cooperative basis and legal restrictions upon such right (other than those necessary to assure proper standards and qualifications), now existing in a number of states, should be removed.

6. High standards of service, efficient administration and reasonable costs require: (*a*) coordination of the services of physicians, hospitals and other health agencies in all phases of prevention, diagnosis and treatment; (*b*) effective cooperation between the providers and the consumers of such services.

7. A medical care program itself will not solve the health problems of the nation. It must be coordinated with all efforts directed toward providing the people with adequate housing, a living wage, continuous productive and creative employment, under safe working conditions, satisfying recreation and such other measures as will correct conditions that adversely affect the physical, mental and social health of the people.

8. There are areas on which the Planning Committee is not yet prepared to report. In the meeting of the Medical Care Section, differing views were expressed as to the method of effectuating the principle of prepayment or insurance. Some believe it can be achieved through voluntary plans. Others believe that a national health insurance plan is necessary.

The following conclusions were approved by the section relative to points to be measured in determining the effectiveness of prepayment plans in meeting the medical care needs of the people:

Points On Effectiveness

1. The extent to which a prepayment plan makes available to those it serves the whole range of scientific medicine for prevention of disease and for treatment of all types of illness or injury.

2. The proportion a plan covers of the population of its areas—local, state or national, as the case may be. (Cost in relation to ability to pay, restrictions on enrolment imposed by actuarial considerations, income level, age, conditions of employment, means of securing enrolment and collecting premiums.)

3. The degree to which a plan makes use of and encourages the development of a high quality of medical care for its subscribers. (Standards of personnel and facilities; organization of services; emphasis on prevention of disease; promotion of health, health education.)

4. The degree to which freedom and willingness to experiment with methods of payment and operation are encouraged in a plan.

5. The degree to which a plan succeeds in arranging amounts and methods of payment and conditions of participation that are satisfactory to physicians, hospitals, and others serving the plan's subscribers.

6. The extent to which efficiency and economy in the operation of a plan are achieved and encouraged by its basic policies and its administrative techniques.

7. The extent to which the individuals or board who carry the ultimate responsibility for a plan represent the interest of those entitled to service and those who are paying the cost, as well as of the physicians, hospitals, or others who are providing the services.

How To Improve Them

The following principles for the improvement of voluntary prepayment plans were listed:

1. There should be the freest opportunity for full cooperation among the providers and consumers of service in the establishment and the administration of medical care plans, provided that full control of the practice of medicine in the program must remain with doctors.

2. The Medical Care Section strongly urges the importance of joint conferences at the earliest possible date among representatives of the American Medical Association and of groups representing the consumers of medical care and services to study the question of establishment and administration of medical care plans.

Among those who represented the American Medical Association, state medical societies and allied groups in the Medical Care Section according to the official list were:

Dr. Thomas A. McGoldrick, Brooklyn, Vice-President, American Medical Association, and member of the Council on Medical

Service; Dr. James R. McVay, Kansas City, Mo., Chairman, Council on Medical Service; Dr. E. S. Bagnall, Chairman Legislative Committee, Massachusetts Medical Society; Dr. E. Dwight Barnett, Detroit, American Hospital Association; Dr. Gunnar Gundersen, State Medical Society of Wisconsin; Dr. Augustus P. Hauss, President-Elect, Indiana State Medical Association; Dr. Charles C. Hayden, Medical Director, Massachusetts Medical Service; Mr. John H. Hayes, New York City, American Hospital Association; Mr. Thomas A. Hendricks, Secretary, Council on Medical Service; Dr. Elmer Hess, Erie, Pa., President, Medical Society of the State of Pennsylvania, and member, Council on Medical Service; Mr. Jay Ketchum, Michigan Medical Service; Dr. Walter B. Martin, Norfolk, Va., member, Council on Medical Service; Dr. E. J. McCormick, Toledo, Ohio, member, Board of Trustees, American Medical Association, and Council on Medical Service; Mr. Maurice F. Norby, American Hospital Association; Dr. Frederick Quigley, Medical Society of New Jersey; Dr. L. Howard Schriver, Cincinnati, President, Associated Medical Care Plans; Dr. James Stevenson, Tulsa, Okla, Oklahoma State Medical Association; Mr. E. A. Van Steenwyk, Philadelphia Blue Cross Commission; Mr. Charles Crownhart, Secretary, State Medical Society of Wisconsin, and Mr. Howard Hassard, California Medical Association.

In addition, representatives of American medicine on the Executive Committee of the Assembly who spoke at the Medical Care Section were: Dr. George F. Lull, Secretary and General Manager of the American Medical Association; Dr. R. L. Sensenich, President-Elect, American Medical Association; Dr. Edward L. Bortz, Philadelphia, President, American Medical Association; and Dr. Paul R. Hawley, Executive Officer, Blue Cross-A. M. C. P. organizations.

Other physicians and representatives of state medical societies attended the section from time to time.

Much has been written on the Assembly, but the final evaluation of this meeting can not be made until Oscar Ewing makes his report to President Truman.

Arrangements for discussion meetings with spokesmen for labor and the cooperative groups have been made by the Council on Medical Service and the Committee on Rural Medical Service.

In conclusion, no report can be made on the Medical Care Section without mentioning the fair and impartial method in which Dr. Hugh Leavell of the Harvard School of Public Health, Chairman, handled the sessions.

COOPERATION WITH NATIONAL CONGRESS OF PARENTS AND TEACHERS

The National Congress of Parents and Teachers has submitted a request to the American Medical Association that representatives of the state medical associations meet with them, together with representatives of other health agencies, to consider problems relative to child health in their several areas. The Council on Medical Service recommends that we comply with this request.

REPORT ON JUNE 19 MEETING

The Council on Medical Service desires to report to the House of Delegates on a meeting held at the headquarters of the American Medical Association on June 19 at the call of the Council. This meeting consisted of the official representatives of thirty-six state medical associations and the Hawaii Territorial Medical Association.

This meeting was called to consider problems relative to prepayment medical and hospital care plans.

After a period of free discussion participated in by a majority of the representatives present, the entire matter was referred to the Council on Medical Service for further study.

The Council will carry on this further study with the Blue Shield Commission and report at a later date to the House of Delegates.

WASHINGTON OFFICE OF THE COUNCIL ON MEDICAL SERVICE

Several months have elapsed since the writing of the original report, and we take this occasion to report what has happened in the meantime.

The two National Health bills, S. 545 and S. 1320, and S. 140, which would create a Department of Health in the cabinet, have all been pigeonholed, and no action has been taken on the companion bills in the House. The Medical Examination of School Children bills, S. 1290 and H. R. 1980, have been pigeonholed in their respective Houses. The same is true of S. 1679—Murray and H. R. 4303—Dingell Dealing with the Extension of Disability Insurance.

Of the Public Health Unit bills (S. 2189—Saltonstall, H. R. 5644—Dolliver, and H. R. 5678—Priest,) only Mr. Dolliver's bill was reported out by the House Committee, but will very likely die there.

S. 2215, Bridges' bill providing for Research in Diseases of the Heart and Circulation, was passed by both Houses and has gone to the President. Two similar bills, H. R. 5087—Keefe and H. R. 5159—Smathers, were tabled by the House Committee in favor of S. 2215.

The House Appropriations Bill, which was discussed in the previous report, was passed by the Senate with very few changes, and awaits the signature of the President.

In the meantime, a Supplementary Appropriations Bill has been passed by both Houses, providing for an additional $1,000,000 for Assistance to States, General; $9,028,000 for Mental Health Activities; $1,115,000 for Emergency Disease and Sanitation Investigations and Controls in Alaska, and $22,000,000 to the Children's Bureau, which approximately equals the fiscal budget. An item of $75,000 was added to meet the expenses of preparing for the 1950 White House Conference on Children and Youth. When this bill was considered by the Senate, a provision was included which would have authorized the setting aside from the $1,000,000 allowed for Assistance to the States, General, of $132,000 to finance twenty-five four-year scholarships to be used in educating persons who would practice in areas where there might be acute need of physicians, as in the Negro areas of the South, the Spanish-American areas of the Southwest and sections where migrant rural workers locate. In conference the House refused to accept the inclusion, and it was dropped. The bill also provides for the transfer of the United States Employment Service from the Department of Labor to the Federal Security Agency. The President objected to this legislation and vetoed the bill. Congress overrode his veto.

The Dental Research Bill, H. R. 6726, authorizing the establishment of a Research Center under the Public Health Service, was passed by both Houses and awaits the President's signature.

The Senate Committee on Labor and Public Welfare authorized its Subcommittee on Health (Chairman, Senator Smith) to continue its study of public health problems and to make a report by March 15, 1949. The committee has a budget of $10,000.

Our membership in the World Health Organization has been established, and delegates are being named. We understand that the House Foreign Affairs Committee Chairman and probably one or two members of the Committee will attend the Conference.

The Senate passed its Selective Service Bill, S. 2655, in which under Section 4 (c) all physicians under the age of 45 would be required to register for service. When it was being debated Senator Murray and Senator Pepper offered an amendment to the effect that no doctors should be called if a sufficient number volunteered. Senator Gurney, Chairman of the Armed Services Committee, said that he would accept the amendment, but it was defeated. It provides for supervision by a civilian board and designates those who were educated at Government expense or who were deferred for their education as the first group to be called. The House bill, H. R. 6401, under Section 4 (c) also required physicians under 45 years of age to register. The Council on National Emergency Medical Service presented an objection to the Committees in both Houses to their respective bills, particularly to the provision requiring the registration of physicians. Neither Armed Services Committee was inclined to withdraw the registration provision.

More time was allowed for developing opposition to the House bill. State societies were asked to communicate with their Congressmen, and there is abundant evidence that they did so. From the Washington office a night telegram was sent to each Representative the day before the bill was to be dis-

cussed on the floor of the House. When the bill was reached on the floor, Congressman Anderson, of California, offered an amendment providing that no physician should be called up before three months after the enactment of the Act and then only if an adequate number did not volunteer. Congressman William Miller, of Connecticut offered another amendment, calling for the elimination of Section 4(c). He ably stated his reasons and was staunchly supported by Dr. Fenton, Congressman from Pennsylvania, Dr. Judd, Congressman from Minnesota, and Dr. Miller, Congressman from Nebraska. Many others enthusiastically supported the amendment, and it was adopted on an aye and nay vote. While writing this report, the House passed its bill, and a Joint Conference Committee will be named immediately to study the two bills. It is altogether possible that some changes will be made, and we have filed with the conferees of both committees a protest against the section requiring registration of physicians under 45.

Dr. Paul Hawley, who was a member of the National Security Resources Board, retired, and Dr. James Crabtree, from the Public Health Service, has been appointed to succeed him.

The Brookings Institution has published its full report of the study it made on "The Issue of Compulsory Health Insurance." It has also published a most informative study entitled "Governmental Costs and Tax Levels." At the last day of the hearings on the National Health Bills, Senator Murray announced that he would file with the Committee a critique, prepared by the Committee for Research on Medical Economics in conjunction with the Public Affairs Institute of New York City, analyzing and refuting some of the statements included in the Brookings study.

The Citizens' Advisory Council, an organization set up by the Senate Committee on Finance about a year ago (Chairman, Edward R. Stettinius) has filed two reports thus far. The first contained a twenty-two point program for expanding and modernizing the Social Security Law to provide ultimate protection for virtually everybody in the United States under the Acts (Old Age Retirement and Survivors' Insurance Program) with much higher benefits than at present. The second report recommended monthly cash benefits to workers deprived of earning power because of permanent and total disability. Monthly benefits would be paid under the Social Security Acts and Old Age and Survivors' Insurance Program when a person covered by the program becomes permanently and totally disabled.

Activities of the Washington Office have multiplied very rapidly during the last few months. The mailing list has now passed the twenty-one hundred mark. We have mailed to each Congressman a copy of Dr. Rappleye's "Comments Made at Hearing Before the New York State Commission on the Need for a State University," as well as the pamphlet entitled "Extension of Rural Medical Service" which was prepared by the Committee on Rural Medical Service. We also sent out to the Congressmen the National Health Program of the American Medical Association.

Our night telegram to the Congressmen, outlining our objection to the draft bill, was much appreciated, if the acknowledgements that we have received can be used as a guide.

In several instances during the past year when a committee has been studying an important bill we have written a letter from this office to each member of the committee outlining the Association's attitude toward its provisions. Our efforts in this activity have been so well received by the Congressmen that we shall do it more often in the future.

Respectfully submitted,

James R. McVay, Chairman.
Alfred W. Adson, Vice Chairman.
Edward L. Bortz.
H. H. Shoulders.
E. J. McCormick.
George F. Lull.
Jesse D. Hamer.
Elmer Hess.
Thomas A. McGoldrick.
Walter B. Martin.
Joseph S. Lawrence, Director, Washington Office.
Thomas A. Hendricks, Secretary.

REPORT OF COUNCIL ON SCIENTIFIC ASSEMBLY

Dr. Henry R. Viets, Chairman, presented the Report of the Council on Scientific Assembly as printed in the Handbook, which was referred to the Reference Committee on Medical Education but which was later withdrawn from that committee and referred to the Reference Committee on Sections and Section Work.

Report of Special Committee to Study Revison of the Constitution and By-Laws

Dr. F. F. Borzell, Chairman, requested the Speaker, in view of the lateness of the hour and the necessity of introducing new business, to defer presentation of this report, and the Speaker declared that it would be deferred until after the presentation of new business.

NEW BUSINESS

Resolutions on Specialty Boards

Dr. Edward P. Flood, New York, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

Whereas, It has always been the admitted aim of the American Medical Association to encourage hospital affiliations for all physicians; and

Whereas, Many hospitals are taking restrictive measures with respect to staff appointments and promotions in order to satisfy requirements established by Specialty Boards; and

Whereas, These requirements of the numerous self-appointed and self-perpetuating specialty boards are often arbitrary, variable and discriminatory; and

Whereas, The accepted method of granting license to practice medicine and surgery is reserved to the various states and the right to practice a specialty, being a logical extension of this method, should be state controlled by standards set up through the various state societies and associations and their components; and

Whereas, It has been accepted as a first principle in the administration of American justice that a man be judged by a jury of his peers; and

Whereas, The Council on Medical Education and Hospitals of the American Medical Association, with the concurrence of the Advisory Board for Medical Specialties, has stated that

"Hospital staff appointments should depend on the qualifications of physicians to render proper care to hospitalized patients as judged by the professional staff of the hospital and not on certification or special society membership"; and

Whereas, This entire problem presents a challenge to the ability of the American Medical Association to regulate itself with justice to all members and to advance the cause of Public Health and Welfare through the improvement of medical standards; therefore be it

Resolved, That the Medical Society of the State of New York through its delegates requests the American Medical Association to take measures to arrest and correct this inequitable situation until such time as means may be found to place certification of specialists on a more reasonable, democratic and local basis; and be it further

Resolved, That, failing to obtain cooperation from the various Specialty Boards and hospitals, the American Medical Association is requested to withhold recognition from those hospitals which make certification by a Specialty Board a necessary qualification for appointment or promotion on a hospital staff.

Proposed Amendment to By-Laws Re Citation for Distinguished Service

Dr. William Weston, Section on Pediatrics, presented the following amendment to the By-Laws, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

CHAPTER VI.—BOARD OF TRUSTEES

Section 6. Citation for Distinguished Service.—The Board of Trustees shall create and establish an award, to be known as the Citation for Distinguished Service, which shall consist of a suitably engrossed citation. The Board of Trustees shall consider the merits of nominees for this citation who shall be persons not of the medical profession and who have by their cooperation and aid in the advancement of medical science, medical education or medical care contributed to the achievement of the ideals of American medicine. The Board of Trustees shall nominate to the House of Delegates on the first day of the annual session of each year not more than three persons with the qualifications on which the Board of Trustees bases its recommendation. The House of Delegates shall vote immediately by voice vote on each of the persons thus nominated.

The Board of Trustees shall be charged with the duty of preparing a suitable citation and with arranging for the conferring of these citations at such time as may seem suitable.

Resolution on Cancer Detection Centers

Dr. George W. Kosmak, New York, presented the following resolution, which was referred to the Reference Committee on Medical Education:

WHEREAS, The detection and diagnosis of malignant disease is an essential medical function and responsibility; and

WHEREAS, As the result of public and professional demands, centers and clinics for this purpose have been organized and are operating widely throughout this country; and

WHEREAS, There is need for standards of operation, procedure, equipment and particularly of adequately trained personnel for the conduct of these institutions on a more or less uniform basis; and

WHEREAS, It is also essential that distinctions be drawn in the operation of such clinics and centers between the detection and/or diagnosis of possible malignant disease; therefore be it

Resolved, That the American Medical Association through its appropriate body take steps to cooperate with the American Cancer Society and other agencies engaged in this activity, for the purpose of formulating standards of procedure and conduct in the operation of cancer detection and diagnostic centers and that the results of these studies be adequately publicized to those concerned, including the medical profession and the public.

Resolutions on Closer Integration of Medical Services of Army, Navy and Air Force

Dr. Joseph P. Henry, New York, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, It is apparent that a much closer integration of the medical services of the Army, Navy and Air Force would lead to greater efficiency, increased economy and a higher level of medical care; and

WHEREAS, Studies of means and methods of this integration have been undertaken by certain agencies or committees of the government; and

WHEREAS, It is believed that these studies should be developed with the greatest possible speed consistent with sound planning; therefore be it

Resolved, That the House of Delegates of the American Medical Association is heartily in favor of this integration; and be it further

Resolved, That the House of Delegates of the American Medical Association requests that the President of the United States and the Secretary of National Defense develop immediately ways and means to further this integration; and be it further

Resolved, That a copy of these resolutions be sent to all members of the Armed Services Committees of both the Senate and House of Representatives.

Resolution On Blue Cross

Dr. C. B. Conklin, District of Columbia, presented the following Resolution, which was referred to the Reference Committee on Medical Service and Prepayment Insurance:

WHEREAS, During the past several years, employees of the American Medical Association have been covered by Blue Cross; and

WHEREAS, The Blue Cross found it necessary to increase its rates and, when its officials were questioned by officers of the American Medical Association with regard to further increases, could give no assurances that they would not occur; and

WHEREAS, The American Medical Association saw fit to withdraw its hospitalization coverage from Blue Cross, contracting with a commercial insurance carrier for hospitalization and medical service coverage for its employees; be it

Resolved, That the Medical Society of the District of Columbia deplores the American Medical Association's failure to support voluntary nonprofit hospital and medical care plans, believing it will greatly handicap these plans in the future. It recommends that the Board of Trustees of the American Medical Association instruct the Secretary and General Manager to negotiate with Blue Cross officials in an effort to reinstate the contract for the coverage of employees of the American Medical Association at the expiration of its present policy.

Resolution on Association of Interns and Medical Students

Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The Association of Interns and Medical Students and the Association of International Medical Students are exhibiting communistic tendencies in their organization; and

WHEREAS, The American medical profession is opposed universally to any organization which advocates the overthrow of the United States government by force and violence; and

WHEREAS, These intern organizations and medical students favor strikes that are upsetting to proper medical education; and

WHEREAS, It is said that these organizations have communistic affiliations; therefore be it

Resolved, That our Council on Medical Education and Hospitals be requested to investigate these organizations as to facts, tendencies, affiliations and objectives, and that a report of the findings of the Council be given to the House of Delegates at the earliest opportunity.

Resolutions on Hospital Exploitation of Professional Medical Services

Dr. J. W. Bird, Maryland, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The practice of radiology, pathology and anesthesiology is recognized by the American Medical Association as the practice of medicine; and

WHEREAS, Leading hospital organizations of the United States have recognized the fact; and

WHEREAS, There is a tendency on the part of certain hospital administrators to utilize the profits resulting from the operation of these departments in their institutions; and

WHEREAS, This constitutes exploitation of professional medical services; and

WHEREAS, This is contrary to medical ethics; therefore be it

Resolved, That it is the sense of the Council that this practice should be condemned; and be it further

Resolved, That the Section on Radiology of the Baltimore City Medical Society urge the House of Delegates of the American Medical Association to instruct the Board of Trustees of the American Medical Association to direct the Council on Medical Education and Hospitals to refuse approval for training of residents and interns of any hospital exploiting professional medical services.

Resolution on Approval of Hospitals

Dr. S. J. McClendon, California, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

Resolved, That the Board of Trustees of the American Medical Association and the Association itself, acting through this House of Delegates, cause the Council on Medical Education and Hospitals of the American Medical Association to add to its basic requirements for the approval of a hospital for intern and resident training the express condition that the hospital establish to the satisfaction of the Council on Medical Education and Hospitals that no unethical practices by doctors of medicine, the hospital itself or others have been permitted to exist or to take place within the hospital.

Resolutions on Medical Education

Dr. S. J. McClendon, California, presented the following resolutions, which were referred to the Reference Committee on Medical Education:

WHEREAS, The preservation of freedom is essential to progress and the continued complete separation of schools, (public and private) from the Federal Government is essential to the preservation of freedom; and

WHEREAS, Federal subsidization of medical students is clearly not a function of the Federal Government and would violate the Tenth Amendment to the Constitution; now, therefore, be it

Resolved, That the American Medical Association is unequivocally opposed to any invasion by the Federal Government into any phase of the schools or students of the country, except for the military academics of the armed services; and be it further

Resolved, That the American Medical Association is specifically opposed to the report of the Committee for the Improvement of Child Health of the American Academy of Pediatrics recommending federal support for pediatric education; and be it finally

Resolved, That minority specialty groups should be restricted by the American Medical Association from advancing and/or approving proposals affecting the interests of the public and the medical profession generally before proper endorsement by the American Medical Association.

Resolutions on Emergency Medical Service

Dr. Ralph B. Eusden, California, presented the following resolutions, which were referred to the Reference Committee on Emergency Medical Service.

Resolved, That the American Medical Association, through its Council on National Emergency Medical Service, its Board of Trustees and/or other appropriate bodies, councils or committees, offer its full services to the armed forces of the United States Government in planning orderly methods of selection and induction of medical officers for military and civilian service in case of need; and be it further

Resolved, That a survey of all physicians in the United States, its territories and possessions, be made, with reference to location, ratio of physicians to population, sex, age, health, dependency status, professional training, military service, holding of reserve commissions, probable availability for military service and any additional data which may be deemed advisable so that plans and methods may be considered and drawn up for determining availability for military and civilian service.

Resolutions on Hospitals and Medical Schools Engaging in the Practice of Medicine

Dr. Robert E. Schlueter, Missouri, presented the following resolutions, which were referred to the Reference Committee on Medical Education:

WHEREAS, There is an ever increasing tendency on the part of hospitals and medical schools throughout the United States to engage in the practice of medicine for profit; and

WHEREAS, This corporate practice of medicine is a professional evil second only in its consequences to socialized medicine; and

WHEREAS, Such practice constitutes not only exploitation of the medical profession but perhaps also of the patient; therefore be it

Resolved, That the House of Delegates of the Missouri State Medical Association in convention assembled condemns the practice of medicine for profit by either hospital or medical school; and be it further

Resolved, That our Delegates to the American Medical Association be instructed to present this information to the House of Delegates of the American Medical Association; and be it further

Resolved, That the American Medical Association remove every hospital engaged in the practice of medicine from its list of hospitals approved for internship and residency training; and be it further

Resolved, That the American Medical Association remove any offending medical school from its list of institutions approved for medical teaching.

Resolution on Life Insurance Fees

Dr. William F. Costello, New Jersey, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The life insurance companies of the United States have been requested by various state medical societies, including the Medical Society of New Jersey, to increase the standard medical fee for regular life insurance examinations from $5 to $10, and to increase other medical insurance fees in like proportion; and

WHEREAS, These fees have not been changed in more than fifty years, and should be adjusted in recognition of changing economic conditions and advancing standards of medical practice; and

WHEREAS, This is a matter of national policy in which the action of single state societies is futile, and relief can be hoped for only by action of the American Medical Association; therefore be it

Resolved, That the House of Delegates of the American Medical Association request the Board of Trustees to negotiate with representatives of the life insurance industry with a view to obtaining a nation-wide upward adjustment in the level of fees paid by life insurance companies to physicians for regular medical examinations and other medical services rendered on request of life insurance companies on behalf of their policy holders.

Resolution on Policy of Federal Children's Bureau

Dr. William F. Costello, New Jersey, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The United States Children's Bureau administers Federal grants-in-aid to states operating tax-supported programs of service to crippled children; and

WHEREAS, These grants-in-aid are made on the basis of a plan submitted by each state crippled children's agency as subsequently approved by the United States Children's Bureau; and

WHEREAS, In administering these grants-in-aid, the United States Children's Bureau has advised various states on standards of care including qualifications of various types of professional personnel who may render services in the state programs; and

WHEREAS, The United States Children's Bureau had adopted as its policy a recommendation of its Advisory Committee on Services for Crippled Children formulated by that Committee on October 10, 1936, and providing that:

> Only surgeons who are certified by the American Board of Orthopedic Surgery, or are eligible for such certification, should be approved by a State agency for surgical services for children suffering from orthopedic conditions.
>
> These surgical services include prescriptions for any prosthetic appliances which the orthopedic condition requires; and

WHEREAS, The observance of this policy by a State Crippled Children's Commission, as a prerequisite to its receiving federal aid, excludes many qualified orthopedic surgeons and general surgeons from rendering services for children suffering from orthopedic conditions and constitutes an arbitrary limitation on their right to practice medicine within the scope of their state licenses and their recognized professional qualifications; therefore be it

Resolved, By the House of Delegates of the American Medical Association that the Board of Trustees be directed to enter a formal protest against this policy with the United States Children's Bureau recommending to that Bureau that its policy be liberalized in such a way as to permit all Fellows of the American College of Surgeons, whether or not certified by the American Board of Orthopedic Surgery, to be approved by the respective state agencies for crippled children, in order that their signatures may be honored on reports of such cases and on prescriptions for prosthetic appliances required in the treatment of these patients.

Resolutions on Single Examination Acceptable to Armed Forces

Dr. Deering G. Smith, New Hampshire, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, It is considered that in the examination of selective service candidates during World War II a great many physician man-hours were wasted by needless reexaminations of candidates; and

WHEREAS, The elimination of such waste of physician man-hours is highly desirable; therefore be it

Resolved, That the House of Delegates of the New Hampshire Medical Society is in favor of a single examination, acceptable to the armed services, in the event of the passage of a Selective Service Act or a Universal Military Training Program; and be it further

Resolved, That the House of Delegates of the American Medical Association be asked to take similar action and that its resolution be transmitted to the appropriate federal authorities.

Resolutions on Paying Physicians Engaged in Examinations for Armed Forces

Dr. Deering G. Smith, New Hampshire, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, It is estimated that 1,200,000 candidates for Selective Service or Universal Military Training will be examined each year; and

WHEREAS, The examination of these candidates is in itself a large volume of work; and

WHEREAS, It is considered that the most equitable means of having this work done on a just basis is that it be done on a fee basis; therefore be it

Resolved, That the House of Delegates of the New Hampshire Medical Society recommends that physicians engaged in these examinations be paid for their work; and be it further

Resolved, That the House of Delegates of the American Medical Association be asked to take similar action and that its resolution be transmitted to the appropriate federal authorities.

Resolutions on Opposition to Amendment to Present Constitution, Article 8, Section 1

Dr. Allen H. Bunce in behalf of the Medical Association of Georgia, presented the following resolutions, which were referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, The Medical Association of Georgia entered into a solemn covenant with other similar state, territorial and district associations to form the American Medical Association as it is now constituted; and

WHEREAS, This covenant is known as the reorganization act of 1902, as evidenced by amendments to the American Medical Association's Articles of Incorporation of 1897 as amended in 1902, known as the "Constitution, or Articles of Incorporation" of 1902; and

WHEREAS, Article 8, Section 1, of the present Constitution of the American Medical Association is a vital part of the aforesaid covenant; therefore be it

Resolved, That the Medical Association of Georgia, in convention assembled, hereby voices its opposition to any change in said Article 8, Section 1, of the present Constitution of the American Medical Association; and be it further

Resolved, That a copy of this resolution be sent to the Secretary, the Speaker of the House of Delegates and the Chairman of the Committee on Revision of the Constitution and By-Laws of the American Medical Association.

Resolution on Staff Personnel at Headquarters

Dr. Allen H. Bunce, Georgia, presented by title a Resolution on Staff Personnel at Headquarters, which was referred to the Reference Committee on Executive Session.

(To be continued)

FOREIGN REGISTRATION AT THE ANNUAL SESSION

Foreign registrations at the Annual Session in Chicago on the first day were 124; second day, 122; third day, 29, and the fourth day, 29, for a total of 304.

Here is a breakdown of the registrations:

South America	57	Egypt	3
Central America	4	Hungary	2
Canada	52	Jerusalem	2
England	21	New Zealand	2
Philippines	14	Palestine	2
Cuba	14	Alaska	2
Mexico	11	Scotland	2
Spain	10	Turkey	2
China	9	Netherlands East Indies	2
Hawaii	9	Iraq	1
Belgium	8	Italy	1
France	6	Algeria	1
Australia	6	Yugoslavia	1
Sweden	6	Nova Scotia	1
South Africa	5	Japan	1
Switzerland	5	Denmark	1
India	5	Ireland	1
Czechoslovakia	5		289
Greece	5	Miscellaneous	15
Puerto Rico	4		
Holland	3	Total	304
Norway	3		

South America, 57: Argentina, 25; Brazil, 13; Chile, 7; Colombia, 1; Ecuador, 1; Peru, 6; Venezuela, 4.

Central America, 4: Canal Zone, 2; Guatemala, 1; Salvador, 1.

Registration at the Chicago Session

The total registration at Chicago was 11,963. Below are summaries by sections and daily by states:

Registration by Days and Sections

Section	June 20 & 21	22	23	24	25	Total
Internal Medicine	814	898	431	398	28	2,569
Surgery, General and Abdominal	450	661	358	357	36	1,862
Obstetrics and Gynecology	150	220	186	167	16	739
Ophthalmology	88	124	74	68	4	358
Laryngology, Otology and Rhinology	51	75	71	54	6	257
Pediatrics	97	128	127	82	15	449
Experimental Medicine and Therapeutics	26	26	12	5	1	70
Pathology and Physiology	65	91	58	46	3	263
Nervous and Mental Diseases	58	94	106	74	9	341
Dermatology and Syphilology	76	110	101	34	4	325
Preventive and Industrial Medicine and Public Health	72	107	57	61	2	299
Urology	54	65	40	64	3	226
Orthopedic Surgery	52	58	47	55	5	217
Gastro-Enterology and Proctology	125	200	55	11	3	394
Radiology	131	142	73	74	3	423
Anesthesiology	32	...	38	51	4	125
General Practice of Medicine	398	625	347	360	29	1,759
Miscellaneous Topics .						
Session on History of Medicine	2	1	...	3	..	6
Session on Physical Medicine	38	20	8	7	..	73
Session on Allergy	24	16	28	6	..	74
Session on Diseases of Chest	142	54	32 - 30		..	258
Two or more sections or no sections marked	125	261	205	249	36	876
Total	3,070	3,976	2,454	2,256	207	11,963

Daily Registration by States

States	June 20 & 21	22	23	24	25	Total
Alabama	31	28	14	5	..	78
Arizona	21	19	6	1	..	47
Arkansas	18	17	5	2	..	42
California	222	172	44	27	4	469
Colorado	32	45	17	12	..	106
Connecticut	45	21	5	6	2	79
Delaware	3	9	2	1	..	15
District of Columbia	59	40	17	24	..	140
Florida	60	30	17	5	2	114
Georgia	28	43	13	9	..	93
Idaho	4	7	2	3	..	16
Chicago	357	871	587	660	53	2,528
Illinois at Large	104	329	305	448	31	1,217
Indiana	70	160	206	170	8	674
Iowa	54	89	44	53	5	245
Kansas	32	48	11	15	..	106
Kentucky	49	64	31	10	1	155
Louisiana	38	37	15	4	..	94
Maine	4	4	2	..	..	10
Maryland	43	43	28	15	13	142
Massachusetts	81	73	26	19	3	202
Michigan	156	190	117	113	7	583
Minnesota	83	89	51	53	13	289
Mississippi	13	15	5	4	1	38
Missouri	144	110	71	41	6	372
Montana	4	8	4	2	..	18
Nebraska	42	43	15	14	3	117
Nevada	4	3	..	..	..	7
New Hampshire	3	4	3	..	1	11
New Jersey	58	60	21	8	6	153
New Mexico	4	8	..	..	1	13
New York	304	207	152	45	4	712
North Carolina	31	24	11	10	..	76
North Dakota	5	15	2	4	..	26
Ohio	130	235	140	70	7	582
Oklahoma	31	39	20	11	1	102
Oregon	14	21	39	3	..	77
Pennsylvania	189	180	32	48	4	453
Rhode Island	11	10	2	2	..	25
South Carolina	12	17	3	2	..	34
South Dakota	4	11	2	3	..	20
Tennessee	48	64	11	16	2	141
Texas	123	100	46	47	2	318
Utah	18	10	3	3	..	34
Vermont	2	2	1	1	..	6
Virginia	18	40	10	10	1	79
Washington	26	28	13	8	..	75
West Virginia	29	32	10	3	..	74
Wisconsin	75	135	184	212	22	628
Wyoming	4	2	..	..	..	6
Canada	22	23	..	7	..	52
Foreign	105	111	29	27	4	276
Hawaii	3	..	..	..	..	3
Total	3,070	3,976	2,454	2,256	207	11,963

Washington Letter

(From Our Regular Correspondent)

June 30, 1948.

U. S. Delegation Attends First World Health Conference

The twenty-one persons representing the United States at the first World Health Assembly in Geneva, Switzerland, are headed by Dr. Thomas Parran as chairman. Additional delegates are: Dr. Martha M. Eliot, associate chief, U. S. Children's Bureau, and Dr. James R. Miller, American Medical Association. Five alternate delegates are: Dr. Francis P. Corrigan, political adviser on Latin America of the American Delegation to the United Nations at New York; James A. Doull, chief, Office of International Health Relations, Federal Security Agency; Dr. Wilton Halverson, director, California Public Health Service, San Francisco; Dr. H. van Zile Hyde, alternative U. S. Representative, interim commission, World Health Organization, and Durward V. Sandifer, deputy director, State Department, Office of United Nations Affairs. The following thirteen persons are advisers: Howard B. Calderwood, State Department, Division of United National Economic and Social Affairs; Nelson H. Cruikshank, American Federation of Labor; D. Albert W. Dent, president, Dillard University, New Orleans; Morton Kramer, chief of research and information for international health relations, U. S. Public Health Service; Mrs. David M. Levy, president, Citizens Committee of Children of New York City; Dr. James E. Perkins, managing director, National Tuberculosis Association, New York City; Miss Lucile Petry, director, Division of Nursing, U. S. Public Health Service; Alvin Roseman, U. S. Budget Bureau; Dr. Paul F. Russell, malariologist, Rockefeller Foundation; James S. Simmons, dean, School of Public Health, Harvard University; John Tomlinson, State Department, Division of United Nations Economic and Social Affairs; Col. Tom Whayne, U. S. Army Medical Corps, and Professor Abel Wolman, Johns Hopkins University.

Permanent Civilian Defense System Stresses Medical Care

Medical care during national emergencies is an important phase of the new civilian defense program. This was revealed when Civil Defense Director Russel J. Hopley said that he expects to complete by next month a plan for a permanent civil defense system affording protection for Americans against germ warfare, atom bombs and guided missiles. Members of the medical profession will be expected to provide leadership and trained personnel for this voluntary civilian program.

Funds for Health Institute

One of President Truman's last acts before adjournment of the eightieth session of Congress for the national political conventions was to sign the second deficiency bill, carrying funds for a wide variety of federal agencies. Among the projects was the provision of $1,000,000 for the new Heart Institute, part of the fund to be spent at the $40,000,000 research center and laboratory to be built soon at Bethesda, Md.

Agency Awards Funds for Nine Cancer Projects

Federal Security Administrator Oscar R. Ewing announced the awards of $162,073 in federal grants for nine cancer control projects. Largest was for $43,320 to the California Department of Public Health to establish a cancer training center at the University of California. With these awards a total of forty-six cancer control projects have been approved since last July 1. A total of $766,748 in grants is involved. In addition, three new grants totalling $1,134,368 have been made for cancer research. These go to Emory University, Atlanta, Ga.; the University of Rochester, Rochester, N. Y., and the University of Texas.

ARMY

RESERVE OFFICERS INVITED TO ACTIVE DUTY

In extending an invitation to Medical Department reserve officers to enter on tours of extended active duty, the Surgeon General announced that current requirements total 1,411 officers, who may be called during the month of June. These requirements, he said, are subject to increase in future months with Army expansion. More than half of the total officers required to fulfil the Medical Department quota will be nurses, of whom 320 are needed. The remainder are divided as follows: Dental Corps, 19; Medical Corps, 203; Veterinary Corps, 29; Medical Service Corps, 265, and Women's Medical Service Corps, 75. Virtually all officers to be recalled will be lieutenants and captains.

MEDICAL MEETING IN KOREA

At the monthly medical meeting of officers stationed in Korea at the 71st Station Hospital, May 19, a symposium was presented on the diagnosis and treatment of leprosy by Dr. Paul S. Crane, medical advisor to the Yosu Leprosarium, Southern Presbyterian Mission, and Dr. D. S. Lowe, medical advisor to the Taegu Leprosarium, Northern Presbyterian Mission. During the afternoon the officers were transported to the Pusan Leprosarium, which houses 250 lepers and where the comparative clinical results obtained in patients treated with "promin" (sodium p,p' diaminodiphenylsulfone - N,N didextrose sulfonate), with "diasone" (disodium formaldehyde sulfoxylate diaminodiphenylsulfone) and with chaulmoogra oil were demonstrated. Col. Charles P. Ward, Surgeon, U. S. Army Forces in Korea, presided at the business meeting. The next monthly medical meeting will be held at the 392nd Station Hospital.

PERSONAL

Dr. Lawrence S. Kubie, professor of psychiatry and mental hygiene, Yale University School of Medicine, New Haven, Conn., and Dr. John M. Lyon, professor of psychiatry, University of Colorado Medical School of Denver, have been appointed consultants to the Surgeon General of the Army.

AWARDS AND COMMENDATIONS
Capt. Edwin B. Anderson

The Army Commendation Ribbon was awarded on June 8 to Capt. Edwin B. Anderson, M. C., U.S.A. The citation read in part as follows: For meritorious rendition of services as Assistant Attending Surgeon, Regional and Station Hospital, Maxwell Air Force Base, Montgomery, Ala., from November 1946 to May 1948. Capt. Anderson consistently displayed intelligence, initiative and extremely high devotion to duty. Dr. Anderson graduated from Vanderbilt University School of Medicine in 1945 and entered the military service in July 1946.

NAVY

MEDICAL HISTORY OF WORLD WAR II

Capt. Louis H. Roddis (MC), Chief, Publications Division of the Bureau of Medicine and Surgery, has been invited to the conference of Official Medical Historians Liaison Committee at Oxford, England, August 3-7. The committee is a group of medical historians from various parts of the British Empire engaged in preparing an official medical history of World War II. Invitations have been extended to representatives of the U. S. Army also. The Liaison Committee met in Ottawa, Canada, last year, when Captain Roddis presented the program of the U. S. Navy Medical History. The meetings of the group are called to exchange views and to discuss problems pertinent to the production of the official World War II medical histories of the United States and the British Empire.

OFFICERS APPROVED FOR GRADUATE TRAINING

The Advisory Board of the Bureau of Medicine and Surgery on June 2 approved the following medical officers for postgraduate training:

Capt. Donald E. Dement, course in hazards of nuclear radiation, University of Rochester.

Capt. Edward S. Lowe, course in surgery, University of Pennsylvania.

Comdr. Wallace E. Allen, residency in otolaryngology at the Naval Hospital, Long Beach, Calif.

Comdr. Frank R. Philbrook, course in public health at Harvard University School of Public Health.

Comdr. Robert E. Rock, course in virus diseases at the G. W. Hooper Foundation, University of California Medical School.

Lieut. Comdr. Byron E. Bassham, fellowship at Northwestern University.

Lieut. Caesar F. Orofino, residency training at the Naval Hospital, Long Beach, Calif.

Lieut. (jg) Leland C. Brannon, residency in surgery at a Naval Hospital to be designated.

Lieut. (jg) Neal D. Sanborn, course in general practice at the University of Colorado.

SYMPOSIUM ON ISOTOPES

The Bureau of Medicine and Surgery has prepared a Supplement to the Naval Medical Bulletin on the "Preparation and Measurement of Isotopes and Some of Their Medical Aspects." The volume contains papers read at the symposium on isotopes before the division of biological chemistry at the New York meeting of the American Chemical Society in 1947 and two articles by authors from the Medical Department of the Navy. The material is not too far advanced for the ordinary medical reader; it should be interesting, particularly to readers interested in research and in the clinical use of isotopes. The volume may be purchased for 35 cents from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

PERSONAL

Capt. Charles F. Behrens, commandant of the Naval Medical Research Institute, Bethesda, Md., addressed the Volunteer Medical Reserve Division in Philadelphia, June 15, on "Atomic Energy in Relation to Medicine."

VETERANS ADMINISTRATION

THOUSAND BED HOSPITAL AT NEWARK, N. J.

The contract has been awarded and excavation work is under way for the construction of the sixteen story veterans' general hospital at the common boundary of Newark, East Orange and South Orange, N.J. Col. Charles F. Williams, district

Veterans' hospital being built at Newark, N. J.

army engineer of New York, announced that because of consideration of the welfare and comfort of patients, the scientific technical planning and the finest in medical equipment and artistic beauty, this institution will be far in advance of anything that New Jersey has to offer. The site of the hospital is the 35 acre former Bamberger Estate. The main hospital building will be H shaped, sixteen stories high on the east side and thirteen stories above ground on the front. The hospital will be surrounded by a fine residential area. The site is beautifully landscaped, and all existing shrubberies and gardens will be preserved. The main building will have 18 acres of floor space, and to walk around its perimeter would total a half mile. South of the main building will be erected a ten room manager's residence and two duplex cottages of two apartments of six rooms each. The nurses' home will be connected to the main hospital by a service tunnel. An attendants' building is also planned for eighteen single rooms. Living quarters for sixty-seven resident physicians and interns will be on the lower floors of the hospital.

CONTRACTS FOR HOSPITAL

The general construction contract has been awarded for a two hundred and eight bed hospital at Erie, Pa. In addition, other contracts were awarded for the heating system, electrical work and elevators.

PERSONAL

Dr. Edward S. Post, formerly supervisor of veterans' hospitals in the Chicago branch of the Veterans Administration, has been assigned as manager of the 2,400 bed veterans' hospital at Fort Custer, Michigan.

PUBLIC HEALTH SERVICE

FELLOWSHIPS AVAILABLE IN MENTAL HEALTH

The U.S. Public Health Service announces that a limited number of mental hygiene fellowships for graduate work will be awarded. The fellowships are open to psychiatrists, psychologists, social workers and other qualified persons interested in research in mental health. These fellowships will be at the predoctorate and postdoctorate levels, while a special research fellowship will be awarded to applicants who qualify for a postdoctorate fellowship and who in addition have demonstrated outstanding ability or who possess special training; this particular fellowship does not carry a set stipend. The stipends for the various kinds of fellowships vary from $1,200 a year to $3,600, depending on the applicant's qualifications and the number of his dependents. Applicants are required to file a statement outlining the investigation on which they will work. Requests for information should be addressed to Division of Research Grants and Fellowships, National Institute of Health, Bethesda 14, Maryland.

LEADING ACCIDENTAL CAUSES OF DEATH—1946

The Federal Security Administrator announces that the six leading accidental causes of death for 1946, based on a study by the Office of Vital Statistics of the U. S. Public Health Service, were: (1) motor vehicle accidents, 33,411; falls, 22,581; drowning, 5,577; burns (except conflagration), 4,856; conflagration, 3,017; railway accidents (excluding collision with motor vehicles), 2,937; other accidents accounted for 25,654, increasing the total number of deaths from accidents in 1946 to 98,033.

CANCER RESEARCH

The Federal Security Administrator announced March 17 cancer research grants totaling $588,032 to be given to institutions, medical schools and hospitals. The largest sum in this list, $90,960 went to Johns Hopkins University, Baltimore, for investigation of mass roentgenologic methods for the early detection of cancer of the stomach.

MISCELLANEOUS

DR. FAILLA ORGANIZES HEALTH PHYSICS BRANCH

The U.S. Atomic Energy Commission announces that Dr. G. Failla, professor of radiology, Columbia University College of Physicians and Surgeons, New York, has been appointed to organize the health physics branch, division of medicine and biology, for the commission. This branch is concerned with protection of persons from radioactive materials. Dr. Failla during the war was consultant to the Metallurgical Laboratory, University of Chicago, and the Manhattan District; he is now consultant to the U.S. Public Health Service and the Veterans Administration. Dr. Failla was awarded the Leonard prize of the American Roentgen Ray Society in 1923 and 1925, the Janeway medal of the American Radium Society in 1935, and the gold medal of the Radiological Society of North America in 1947.

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Albro, W. A. ..... Boston
Alexander, R. M. ..... Lynbrook, N. Y.
Allen, C. G. ..... Memphis, Tenn.
Anderson, K. J. ..... Boise, Idaho
Arrick, M. S. ..... New Haven, Conn.
Askue, W. E. ..... Larchmont, N. Y.
Atchison, M. V. ..... Dallas, Texas
Bacorn, R. W. ..... Elmira, N. Y.
Baden, W. F. ..... Raymondsville, Texas
Baird, W. C. ..... Columbus, Ohio
Balin, B. R. ..... Philadelphia
Balsley, R. E. ..... Reidsville, N. C.
Barr, J. H. Jr. ..... Euclid, Ohio
Bateman, A. V. ..... Portland, Ore.
Bear, J. M. ..... Hamburg, Pa.
Beilstein, E. H. ..... Cleveland
Berezin, S. W. ..... New York
Billows, J. A. ..... New York
Birtch, P. K. ..... Buffalo
Black, H. ..... Indian Hill, Ohio
Blackwell, R. C. ..... Pomona, Calif.
Booker, N. U. ..... Naples , Fla.
Bortin, M. M. ..... Milwaukee
Boswell, H. P. Jr. ..... New Albany, Miss.
Brashear, H. R. Jr. ..... Washington, D. C.
Brasino, J. J. ..... Glendale, N. Y.
Brigham, D. P. B. ..... Omaha
Broadrick, B. ..... Chickasha, Okla.
Brown, D. E. ..... Beverly, Mass.
Brown, E. M. Jr. ..... Princeton, W. Va.
Brown, J. M. ..... Gadsden, Ala.
Bruecken, A. J. Jr. ..... Pittsburgh
Butterly, J. M. ..... Forrest Hills, N.Y.
Cannon, B. W. ..... Brownsville, Tenn.
Caruthers, D. F. Jr. ..... Memphis, Tenn.
Caylor, C. C. Jr. ..... Silver Spring, Md.
Childers, E. M. ..... Humboldt, Kan.
Chow, I. D. ..... Fresno, Calif.
Cochran, B. C. ..... Glenside, Pa.
Coe, J. I. ..... Minneapolis
Cohen, J. G. ..... Burlington, Vt.
Coles, R. S. ..... New York
Cook, C. D. ..... Brookline, Mass.
Cook, E. E. Jr. ..... Baltimore
Cook, T. D. ..... Framingham, Mass.
Cooke, R. W. ..... Windsor, Conn.
Cooley, D. A. ..... Houston, Texas
Corman, H. H. ..... Dorchester, Mass.
Covington, T. Jr. ..... Muskogee, Okla.
Creager, B. O. ..... Walton, Ind.
Crocker, T. T. ..... San Diego, Calif.
Cross, A. J. ..... Scranton, Pa.
Culberson, A. W. ..... Morristown, N. J.
Cummings, A. J. ..... Scranton, Pa.
Cytryn, S. ..... Long Island, N. Y.
Dauphin, R. ..... Fountain, Ala.
Davis, J. J. ..... Connelly Springs, N. C.
Davis, R. M. ..... Marion, Ind.
D Elia, L. N. Jr. ..... Longmeadow, Mass.
Denham. H. C. ..... Vanceburg, Ky.
Distefano, A. J. Jr. ..... Worchester, Mass.
Doherty, D. D. ..... Freewater, Ore.
Dolan, C. V. ..... Downingtown, Pa.
Donovan, J. J. ..... Ligonier, Pa.
Doukas, J. A. ..... Havre de Grace, Md.
Duerksen, E. C. ..... El Morrow, N. Mex.
Du Mont, C. C. ..... Spokane, Wash.
Edwards, J. B. ..... Arkansas City, Kan.
Edwards, W. S. III. ..... Birmingham, Ala.
Elias, K. ..... New York
Ellis, T. K. ..... Massilon, Ohio
Falloon, E. L. ..... Chicago
Fassett, J. R. ..... Davis, Calif.
Fiest, M. J. ..... Fresno, Calif.
Finch, S. C. ..... Broadalbin, N. Y.
Flowers, C. E. Jr. ..... Zebulon, N. C.
Flynn, R. T. Jr. ..... Portland, Ore.
Forester, V. R. ..... Shawnee, Okla.
Fox, M. ..... Columbus, Ohio
Friedman, H. P. Jr. ..... Virginia Beach, Va.
Frierson, J. H. Jr. ..... Charleston, S. C.
Friend, F. ..... Cincinnati
Frieswyk, M. J. ..... Grand Rapids, Mich.
Gallagher, M. A. ..... Providence, R. I.
Garner, M. J. ..... Mattapan, Mass.
Garrison, S. C. Jr. ..... Nashville, Tenn.
Gates, W. L. Jr. ..... Canandaigua, N. Y.
George, D. I. ..... Johnstown, Pa.
Giesen, C. P. ..... Superior, Wis.
Gill, J. H. ..... Portland, Ore.
Gillett, F. S. ..... Grand Rapids, Mich.
Gilson, S. B. ..... New York
Goade, W. J. Jr. ..... Batavia, N. Y.
Goldberg, D. ..... New York
Goldensohn, S. S. ..... Newark, N. J.
Goldware, R. R. ..... Los Angeles
Gould, W. J. ..... New York
Graham, R. E. ..... San Diego, Calif.
Greenspan, E. M. ..... Brooklyn
Greve, M. J. ..... Houston, Texas
Haberlin, J. P. ..... Providence, R. I.
Hassett, A. J. Jr. ..... Weymouth, Mass.
Hays, D. M. ..... Riverside, Calif.
Helsing, W. J. ..... Rochester, Pa.
Henschel, E. V. ..... St. Louis
Hensley, C. D. Jr. ..... Wichita, Kan.
Herlihy, R. M. ..... Fairmont, W. Va.
Hill, W. E. ..... Carrollton, Ala.
Himes, R. S. ..... Dayton, Ohio
Hoffman, C. J. ..... Churchville, Pa.
Holloway, J. W. ..... Portland, Ore.
Holt, E. K. II ..... Harding, Mass.
Honaker, W. ..... Denver
Hopkins, R. J. ..... Orofino, Idaho
Horn, L. G. Jr. ..... Magee, Miss.
Horton, J. H. ..... Bloomington, Ind.
Howard, R. J. ..... Fort Worth, Texas
Howe, B. E. Jr. ..... New York
Howe, G. W. ..... New York
Hudson, R. A. ..... Buffalo
Hulme, H. B. ..... Manti, Utah
Hyde, J. S. ..... Chicago
Ingle, G. W. ..... Montebello, Calif.
Ingram, J. M. Jr. ..... Tampa, Fla.
Isaacson, N. H. ..... Brooklyn
Jankowski, V. ..... Elmhurst, N. Y.
Jenkins, F. E. ..... Knoxville, Tenn.
Johnson, H. Jr. ..... Louisville
Johnson, R. M. ..... Lima, Ohio
Jones, A. W. ..... River Edge, N. J.
Jones, H. H. ..... Altoona, Pa.
Josselson, A. J. ..... Ahoskie, N. C.
Kaplan, H. M. ..... Hartford, Conn.
Kaufman, S. A. ..... New York
Kausel, H. W. ..... Beach Bluff, Mass.
Kietel, H. G. ..... New York
Kelly, J. F. Jr. ..... Omaha
Kendrew, L. J. ..... Easthampton, Mass.
Kenney, B. A. ..... Santa Fe, N. Mex.
Keuper, C. S. ..... Schulenberg, Texas
Knoff, W. F. ..... Syracuse, N. Y.
Koeing, P. .....
Kozlowski, A. W. ..... Buffalo
Kudarauskas, E. N. ..... Worcester, Mass.
Kurland, W. ..... Washington, D. C.
Lambrecht, P. B. ..... Chicago

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

ALABAMA

Fifty Year Club.—The Medical Association of the State of Alabama this year inaugurated its fifty year club with one hundred and thirty-two members. Physicians who graduated fifty or more years ago were asked to sign the "Fifty Year Club" register. Their names were printed in the program; on the morning of the second day of the annual session recognition of the "Golden Anniversary in the Practice of Medicine" was made and certificates were awarded to those who were present.

CALIFORNIA

Personal.—Dr. Norman C. Paine, Glendale, Calif., former assistant football coach at the University of Chicago, was awarded a citation of merit at the University of Chicago Alumni banquet June 11, in recognition of public service to the community, the nation and humanity. He is a member of the faculty of the University of Southern California School of Medicine, Los Angeles, and a graduate of Rush Medical College, Chicago.

Venereal Disease Demonstration Project.—Santa Clara County is conducting a venereal disease demonstration project sponsored by the Palo Alto City, Santa Clara County, and San Jose City health departments, the county medical society, the state department of public health and the U. S. Public Health Service. The purpose is (1) to demonstrate that strengthening of the private physician and health department relationship is an essential of a sound venereal disease control program and on a continuing basis will result in increasing the number of patients under the care of private physicians and (2) to demonstrate that a public information program integrated with the general health education program and on a continuing basis will result in accelerated case finding both for the private physician and the health departments.

COLORADO

Dr. John Ryan Awarded the Gold-Headed Cane.—In a commencement day ceremony at the University of Colorado School of Medicine, Denver, the Gold-Headed Cane was passed on from Dr. James J. Waring, professor of medicine at the school, to Dr. John G. Ryan, associate professor of medicine, "for his devotion to students and patients over a period of many years." Dr. William J. Kerr, who instituted the gold-headed cane ceremony at the University of California, gave the baccalaureate address on this occasion. His subject was "Immortality of Inspiration." Dr. Ryan, a graduate of Rush Medical College, Chicago, in 1910, and member of Alpha Omega Alpha and Sigma Xi honorary fraternities, has practiced medicine in Denver since returning from service in the Army medical corps in World War I.

A cane with a gold top was, at least in England, an essential part of the physicians' equipment in the eighteenth century. John Radcliffe (1650-1729), who attended King William and Queen Mary, carried such a cane and passed it on to his successor in practice, Richard Mead. The cane was passed down to various successive physicians (Askew, Pitcairn and Baillie), then in the early nineteenth century was deposited in the Royal College of Physicians, where it remains to this day.

Isador H. Coriat of Boston, in his paper on "The Symbolism of the Gold Headed Cane" (*Annals of Medical History*, March 1924, page 126) said, "Thus the gold-headed cane became a sort of symbolic carrier of the power of the physician or the immortal transmitter or bearer of power as it passed from one physician to another." The gold-headed cane ceremony has been instituted at certain medical schools in the United States. Among other physicians who have thus been honored are: George Dock, Pasadena, Calif.; George Blumer, San Marino, Calif.; Herbert C. Moffitt, San Francisco; James B. Herrick and Ernest E. Irons, Chicago; William S. Middleton, Madison, Wis., and James J. Waring, Denver.

CONNECTICUT

Dr. Lindskog Heads Yale Department of Surgery.—Dr. Gustaf E. Lindskog, associate professor of surgery, has been appointed William H. Carmalt professor of surgery and head of the department of surgery, Yale University School of Medicine, New Haven. The professorship was formerly held by Dr. Samuel C. Harvey, now Yale's first professor of surgery in oncology and president of the Connecticut State Medical Society. Dr. Lindskog received his medical degree at Harvard Medical School, Boston, in 1928.

State Diabetes Association.—The Connecticut Diabetes Association, organized last April during the annual meeting of the state medical society, plans for statewide operation next fall. Professional memberships will be open to all physicians, and policy control will be vested in this group. Associate members will include diabetic persons, their relatives and friends, nurses, pharmacists, public health officials, laboratory technicians, social workers, nutritionists and other allied groups. The program of the association is to include education of relatives and friends in the proper care of diabetic patients, standardization of treatment and promotion of the principle of early diagnosis. Officers of the association are: Dr. Barnett Greenhouse, New Haven, president, and Dr. John Dobkins, Stamford, secretary.

DISTRICT OF COLUMBIA

Personal.—Dr. Walter A. Bloedorn, medical director of the George Washington University Hospital, received the honorary degree of doctor of science at convocation exercises at the university March 23.

Dr. Davidson Honored.—At a meeting of the Medical Society of the District of Columbia, April 14, a portrait of Dr. Edward Y. Davidson was unveiled in the society building. The physician was being honored for his service to the society, particularly in relation to the erection of its building, instigated while he was president in 1916 and completed in 1920. Dr. Davidson was present at the ceremonies.

Dr. Rossiter to Retire as Chief of Staff.—It is reported that Dr. Percival S. Rossiter will retire on September 1 as chief of staff at Gallinger Municipal Hospital, a position he has occupied since retiring as Surgeon General in 1938, after serving thirty-five years in the Navy. George Washington and Georgetown universities jointly will nominate the next chief of staff of the hospital. The Rev. Paul A. McNally, S.J., dean of Georgetown Medical School, said, "Dr. Rossiter has made a magnificient contribution to the education of Georgetown men at Gallinger Hospital, and the university is deeply appreciative of his contribution."

Francis R. Hagner Memorial Library.—A group of colleagues and friends recently dedicated the Francis R. Hagner Memorial Library in the room at Garfield Hospital, which was the site of the former solarium. The memorial was planned in 1941, a year after Dr. Hagner's death, but building was delayed by the war. Dr. John H. Cunningham, Boston, unveiled Dr. Hagner's portrait, a gift from the American Genitourinary Association. The hospital has employed a full time medical librarian. The library was formally presented to Garfield Memorial Hospital by the chairman of the memorial committee, Dr. Harry H. Kerr, Washington, and was accepted by Mr. George Dunlop, vice president of the board of directors.

ILLINOIS

Doctor Otten Memorial.—A portrait of Dr. Harry Otten, purchased by members of the staff of Memorial Hospital, Springfield, has been placed in the doctors' lounge. This is the initial action on the proposed Otten Memorial, concerning which a board of trustees has been appointed to recommend the type of memorial to be established. Dr. Otten, who died Feb. 18, 1948, was a member of the executive committee and former president of the medical staff of the hospital.

Chicago

Cancer Clinic for Men.—Chicago's second cancer detection clinic for men opened June 3 at Mercy Hospital and will operate each Thursday. Appointments can be made by calling Whitehall 4373.

Research on Preoperative Preparation.—The University of Illinois College of Medicine has received a grant of $4,500 from Abbott Laboratories for the study of procedures and germicides in the preoperative preparation of surgeon and patient. The investigation is under the direction of Dr. Milan V. Novak, head of the department of bacteriology and public health.

Loyal Davis Heads Passavant Staff.—Dr. Loyal Davis became chief of staff at Passavant Memorial Hospital June 18, succeeding Dr. Howard B. Carroll. Dr. Davis is chairman of the division of surgery at Northwestern University Medical School and is editor of *Surgery, Gynecology, and Obstetrics*. Since 1925 he has been consulting neurologic surgeon at Hines Veterans Hospital.

Society Installs Officers.—At the annual meeting and dinner of the Chicago Medical Society June 16 at the Drake Hotel Dr. J. Roscoe Miller, dean of Northwestern University Medical School, was installed as president. Dr. Willard O. Thompson was made president-elect and Dr. H. Kenneth Scatliff, secretary. Dr. Warren H. Cole gave an address on "Socialized Medicine in England."

Portal House Leased to Committee on Alcoholism.—The city council has leased Portal House, a retraining center for alcoholic addicts, without rental for the rest of 1948 to the Chicago Committee on Alcoholism, headed by Anton J. Carlson, Ph.D., emeritus professor of physiology, University of Chicago School of Medicine. Portal House was organized a year ago and was to have been abandoned June 15 by the city welfare department because of lack of funds. Clients of the welfare department will be treated for $5 a day and outside paying patients for $8 a day.

INDIANA

Social Hygiene Association.—At a meeting in May, Dr. Arthur F. Weyerbacher, Indianapolis, treasurer of the Indiana State Medical Association, was elected president of the newly organized Indiana Social Hygiene Association. Units will be organized in each county. Mrs. A.W. Ratcliffe, Evansville, immediate past president of the Woman's Auxiliary to the state medical association, was named secretary, and Harold B. West, Indianapolis, treasurer.

Conference on School Health.—The committee on school health and physical education of the Indiana State Medical Association will sponsor a conference of physicians, public school executives, health educators and physical education instructors at Indianapolis October 6. The objective will be to bring about better participation by physicians in the school health field. Fred V. Hein, Ph.D., Chicago, Bureau of Health Education, American Medical Association, is assisting the committee in arranging the conference.

LOUISIANA

Society Election.—At the twenty-fourth annual business meeting of the New Orleans Gynecological and Obstetrical Society on May 12, the following officers were installed: Dr. Woodard D. Beacham, president; Dr. Conrad G. Collins, president-elect; Dr. Harry Meyer, secretary, and Dr. Eugene H. Countiss, treasurer.

University Appointments.—G. John Buddingh, formerly professor of bacteriology, Vanderbilt University School of Medicine, Nashville, Tenn., has been appointed professor of microbiology at the Louisiana State University School of Medicine, New Orleans. Other recent appointments to the full time faculty include: Ruth A. Miller, formerly of Johns Hopkins University School of Medicine, Baltimore, as assistant professor of anatomy; William J. Obrinsky, New York, instructor in pediatrics; Thomas Hernandez, New Orleans, instructor in biochemistry; Irving M. Essrig, New Orleans, instructor in surgery; Jack G. Miller, New Orleans, instructor in obstetrics and gynecology.

MINNESOTA

Certificate of Merit.—Drs. Earl H. Wood and Edward H. Lambert, Rochester, received the President's Certificate of Merit on May 18 at a luncheon meeting at the Mayo Foundation House, Rochester. The awards, made by Rear Admiral Frederick L. Conklin, Commandant of the Ninth Naval District, were made in recognition of outstanding services in experimenting with the effects of high acceleration of the human body.

New Head of Bacteriology Department.—Dr. Jerome T. Syverton, professor of microbiology, Louisiana State University School of Medicine, New Orleans, has been appointed professor and head of the department of bacteriology and immunology at the University of Minnesota Medical School, Minneapolis, succeeding the late Dr. Robert G. Green. Dr. Syverton is a graduate of Harvard Medical School, Boston, 1931.

NEW YORK

Public Health Service.—The annual conference of New York State Health Officers and Public Health Nurses is scheduled for July 21-23 at the Grand Union Hotel, Saratoga Springs. The program will emphasize tuberculosis control, nutrition in public health and development of county health departments. Among the speakers will be Dr. Leonard A. Scheele, Surgeon General, U. S. Public Health Service, and Dr. Leo F. Simpson, Rochester, president of the Medical Society of the State of New York.

Community Honors Dr. Smallman.—Citizens of Ellicottville and the surrounding area recently honored Dr. Alfred W. Smallman at a testimonial dinner and reception. Public officials, medical colleagues and business men were among those attending. Dr. Smallman began practice in Ellicottville in 1888. He has been president of the Bank of Ellicottville for sixteen years, was mayor for six years and served thirteen years on the board of education. He was recently honored by the Medical Society of the State of New York for his long service.

New York City

Memorial to Dr. Lewi.—The New York Infirmary has received $14,000 to start an endowment fund in honor of Dr. Emily Lewi, who was a former director of pediatrics at the infirmary. The sum, presented by friends, will support a room in the new infirmary buildings, to be known as the Emily Lewi Memorial Room.

Dr. Browder Director of Department Surgery.—Dr. E. Jefferson Browder will become director of the department of surgery of the Long Island College Hospital July 1, succeeding Dr. Emil Goetsch, who is retiring as director after twenty-nine years of service. Dr. Goetsch will continue as attending surgeon at the hospital and a member of the board of regents. Dr. Browder is at present an attending neurosurgeon at Brooklyn, Methodist and Kings County hospitals and consultant neurosurgeon at other hospitals.

Dr. Van Etten Honored.—On his retirement as chairman of the board of directors of United Medical Service (The Doctor's Plan), Dr. Nathan B. Van Etten, who has served the medical and surgical prepayment plan since its inception, was presented with an illuminated scroll in recognition of the "enduring appreciation and affectionate regard of his fellow directors." The presentation was made by Dr. Charles Gordon Heyd, president, on May 26 at a combined meeting of the board of directors of Associated Hospital Service, New York's Blue Cross Plan and United Medical Service held at the Gramercy Park Hotel, New York.

New Home Care Departments.—To reduce the demand for beds in the city's twenty-four hospitals, a new department of home care is to be established in each hospital to serve persons who no longer need the full run of hospital services and who can recover at home under medical and nursing care. According to Dr. Edward M. Bernecker, hospitals' commissioner, it is planned that Bellevue Hospital, Kings County Hospital and Goldwater Memorial Hospital will be set up to care ultimately for 200 home patients each; that Queens General, Morrisania, Harlem, Lincoln, Fordham, City and Metropolitan hospitals will take care of 100 cases each, and that Coney Island, Greenpoint, Cumberland and Gouverneur Hospitals will take care of 50 home patients each. This is equal to adding 1,500 beds to this department or constructing buildings costing at least $22,000,000. Average cost of the home patient is $2.23 per day, and the average cost in hospital is $9 per day.

OHIO

Cleveland Contributions for Hospital Beds.—The Academy of Medicine of Cleveland recently participated in a drive to raise $9,000,000 to provide additional hospital beds. Setting a goal of $300,000 for themselves, Cleveland physicians found that they had actually donated $419,104.50 when the drive was completed.

Research in Nutrition—The Robert Gould Research Foundation recently made annual grants of $10,000 for a three year period to the University of Cincinnati College of Medicine for promoting research in nutrition. The foundation also gave scientific research equipment and a technical library valued at $25,000.

Alumni Achievement Award.—The first Alumni Achievement Award of the Ohio State University College of Medicine, Columbus, was presented recently to Dr. Verne A. Dodd, professor in the department of surgery at the university and chief of staff of University Hospital, and to Dr. Robert A. Moore, dean of the Washington University School of Medicine, St. Louis.

Academy of General Practice.—Dr. Joseph W Lindner, Cincinnati, was elected president of the Ohio Academy of General Practice, March 30, in Cincinnati; other officers elected were: Dr. Emery G Kyle, Newton Falls, president-elect; Dr. Earl W Burgner, Akron, secretary, and Dr. Henry W. Lehrer, Sandusky, treasurer. Ohio is the twenty-first state to become affiliated with the national organization.

SOUTH CAROLINA

Society News.—At the meeting of the county medical society in Greenville, June 7, Dr. Curtis J. Lund, professor of obstetrics and gynecology, Louisiana State University School of Medicine, New Orleans, spoke on "Recent Advances in the Management of Abortions" and Dr. David F. Watson, Greenville, "Management of the Third Stage of Labor."

Royster Club.—A group of younger physicians in Raleigh have formed a club in honor of Dr. Hubert A. Royster, Raleigh, retired surgeon, who is the honorary president. The club is devoted to medical research, the presentation of original work and the discussion of advanced scientific knowledge. Membership at present is limited to eighteen.

VIRGINIA

Personal.—Dr. Edward J. Van Liere, dean of the West Virginia University School of Medicine, Morgantown, W. Va., was awarded the honorary degree of doctor of letters by the Medical College of Virginia, June 8.

Dr. Porter Goes Abroad.—Dr. William B. Porter, Richmond, left June 9 for London as a representative of the American Medical Association, the American Board of Internal Medicine and the Medical College of Virginia, Richmond, at a meeting of the British Medical Association, June 21-July 2 at Cambridge University, Cambridge, England. After the meeting Dr. Porter will be sent by the U. S. Army Surgeon General on a lecture tour in the United States zone of Germany and Austria. He will also inspect military medical schools in fifteen of the major cities of the two countries and will return to the United States early in August. Dr. Porter served throughout the war and is still serving on the civilian consultant staff for the Surgeon General.

GENERAL

Visiting Orthopedic Surgeons.—Thirteen British orthopedic surgeons are currently visiting medical centers in the United States and Canada on a six week tour sponsored by the American Orthopaedic and Canadian Orthopaedic associations.

Argentina Confers Awards.—Drs. Chevalier Jackson, Philadelphia, and Jacob C. Geiger, Stanford University, Stanford University, San Francisco, were recently honored by Argentina when the Order of San Martin the Liberator was conferred on them.

Chinese College Seeks Scientific Books.—The United Board for Christian Colleges in China, representing thirteen institutions, is attempting to secure up-to-date books for its forty-one colleges, four of which are medical colleges. China has largely depended on these colleges for well trained physicians to staff American missionary hospitals and to promote public health work. The board will pay parcel post charges on any available books.

Coordination of International Congresses.—Representatives of ten organizations met on April 12 in Paris to plan for a bureau to coordinate international congresses as to dates, places, common interest and borderline subjects. Representatives from the following organizations attended the meeting: International Union Against Tuberculosis, International Council of Nurses, International Union Against Venereal Diseases, World Medical Association, International Pediatric Association, International Society of Surgery, International Union Against Cancer, International Congress of Radiology, International Congress on Mental Health and International League Against Rheumatism.

Research in Heart Disease.—An additional $103,000 in research funds for heart disease, including twelve student fellowships, three postgraduate fellowships and nine grants in aid to hospitals and universities, has been announced by the Life Insurance Medical Research Fund, New York. The purpose of the fellowships is to help meet the need for qualified men and women trained in research technics. Student fellowships, amounting to between $1,500 and $1,800, go to students who have not yet received their doctorate degrees and provide for a year's additional undergraduate training under leading scientists. Postgraduate fellowships, amounting to between $2,500 and $4,000, go to graduate workers for similar study. The list of awards is the second announced this year and brings the 1948 allocations to $637,000.

Surgical Society Opposes Resolution of Anesthesiologists.—The American Surgical Association has taken the following action relative to the resolution adopted by the American Society of Anesthesiologists, Inc., June 11, 1947 (THE JOURNAL, August 2, 1947, page 1189) concerning the training of persons other than doctors of medicine as anesthetists. In so far as the resolution pertains to the training and employment of nurses as technicians under competent medical supervision, the American Surgical Association has made its position of record for the following reasons: 1. The number of physician anesthetists trained or at present in training is totally inadequate to carry the present work load of essential surgery. 2. In view of the increased demand for physicians in all branches of medicine, it is improbable that there will be a flow of recent graduates into anesthesiology sufficient to correct this shortage. 3. As a general policy it is safer to employ nurses trained and working under medical supervision than it is to revert to the use of medical graduates without special training and working without specialist supervision. 4. Trained and working under medical supervision, the nurse-technician anesthetist can continue to carry a portion of the work load with full protection to the safety of the patient.

LATIN AMERICA

Congress on Cancer in Havana.—The third National Congress on Cancer was held May 2 in Havana at the new Curie Institute for Cancer, under the presidency of Dr. Rufino Moreno. Among those participating were: Hyman I. Goldstein, Camden, N. J.; Chevalier L. Jackson, Jacques P. Guequierre and Reuben Friedman, Philadelphia; E. W. Alton Ochsner, New Orleans; Charles P. Bailey, Philadelphia; Irving A. Sarot, New York; Henry A. Brodkin and Eugene V. Parsonnet, Newark, N. J.; Michael Scott and Moses Behrend, Philadelphia; Howard W. Jones Jr., Baltimore, and Eugene M. Bricker, St. Louis.

MEXICO

Course in Tropical Dermatology.—Under the auspices of the Sociedad Mexicana de Dermatologia, a second two week course on tropical dermatology will be given August 15-28 in Mexico, D.F., similar to the first course conducted especially for American doctors in 1945 at the request of Dr. Howard Fox, New York, and Dr. Leon Goldman, Cincinnati. The course will include clinical and laboratory features of several dermatologic conditions often seen in tropical America: mal del pinto, onchocerciasis, parasitic diseases of animals, leprosy, deep mycosis, leishmaniasis and chemical control of insects. This course will be limited to American dermatologists and the number of registrations to fifty doctors. The fee will be $100, payable at the time of registration in Mexico, D.F. All written material will be presented in English. Information may be obtained from Dr. Fernando Latapi, Permanent Secretary, Sociedad Mexicana de Dermatologia, Zacatecas 220-6, Mexico City, or Dr. Leon Goldman, Department of Dermatology and Syphilology, College of Medicine, University of Cincinnati, Cincinnati, Ohio.

FOREIGN

World Health Mission to Greece Report.—An emergency program to improve health conditions in the Dodecanese Islands has been mapped by representatives of the World Health Organization Interim Commission's Mission to Greece. According to Dr. J. Miller Vine, Grimsby, Lincolnshire, England, who was responsible for a survey made in recent weeks, tuberculosis is the most serious health problem on the islands. An extensive program of organizing health centers and dispensaries on the main islands of the Dodecanese group is immediately necessary, Dr. Vine said. It is planned now to set up a public health center with five clinical sections on the three islands of Rhodes, Cos and Colymnos, as well as a mass x-ray program for Rhodes. Malaria was an extremely serious problem until DDT spraying was introduced by the World Health Organization in 1947; the incidence was then reduced by more than 80 per cent, according to the report. In Greece proper forty-five tuberculosis dispensaries and two mass x-ray centers have been put into operation under the tuberculosis program. Despite the efforts of the Greek staff and of the health mission, only twenty-five of the forty-five dispensaries are reported to be functioning satisfactorily. Economic difficulties, lack of trained personnel and the civil war are continuing to hamper the health program in Greece. The first semirural center for mass x-ray is now being installed in Elefsis Sanatorium. Personnel of the Interim Commission are helping to operate the center during the first three months and are training Greek staff members to continue the work. Col. D. E. Wright, chief sanitary engineer of the World Health Organization, who is in charge of the malaria and sanitation programs, has announced the purchase of additional aircraft for use in DDT spraying.

Marriages

NATHAN RALPH to Dr. ALICE LESCHIN GROSS, both of Philadelphia, April 4.

WILLIAM BRODHEAD GEORGE, Verona, N. Y., to Miss Mary Casham Mills in Irondequoit, April 10.

ROBERT NELSON RICKETTS, Oil City, Pa., to Miss Jane Forsyth at Seminole, Fla., April 17.

LOUIS JACKSON FRYMIRE to Miss Louise McCalmont, both of Pittsburgh, recently.

GARTH KINSEY GRAHAM, Elmhurst, Ill., to Miss Jeanne Natalie Williams of Lynn, Mass., May 22.

DUDLEY PENNINGTON JACKSON, Baltimore, to Miss Ada Patricia Custer of Ashland, Va., May 15.

WILLIAM HARRISON HIGGINS to Miss Emily Armistead Peyton, both of Richmond, Va., May 29.

FRANKLIN TALMADGE BUCHANAN, Bristol, Va., to Miss Marjorie Ann Haas in Akron, Ohio, May 29.

JAMES JOSEPH FINNERTY, New York, to Miss Anna Lowell Putnam of Springfield, Mass., April 8.

LLOYD LAGERQUIST, East Providence, R.I., to Miss Barbara Marilyn Drummond at Barrington, May 8.

JOHN CALHOUN RISHER to Miss Anne Hume Nash, both of Charlottesville, Va., April 10.

Deaths

Charles Albert Elsberg ● died at his home in Stamford, Conn., March 18, aged 76, of coronary heart disease. Dr. Elsberg was born in New York on Aug. 24, 1871. He graduated from the College of Physicians and Surgeons, medical department of Columbia College, New York, and began to practice in New York in 1893. In 1909 he was one of the founders of the New York Neurological Institute, where he became chief of the neurologic service and, at the time of his death, emeritus chief. He was an emeritus professor of neurologic surgery at his alma mater and formerly professor of neurologic surgery at the New York Post-Graduate Medical School and Hospital, Columbia University. He was a fellow of the American College of Surgeons, member and past president of the American Neurological Association, a member of the Society of Neurological Surgeons, the Association for Research in Nervous and Mental Diseases and the American Association for the Advancement of Science. He was an honorary member of the Société Internationale de Chirurgie and the Società Radio-neuro-chirurgical Italiana. During World War I, Dr. Elsberg was requested by the Surgeon General of the Army to organize in New York a school for instruction in neurosurgery and was designated as military director of the institution. He was consultant surgeon at the Vassar Brothers Hospital in Poughkeepsie, Flower and Fifth Avenue Hospital, Knickerbocker, Montefiore and Mount Sinai hospitals. In 1938 he delivered the eighth Walter M. Brickner Lecture at the Hospital for Joint Diseases. He was a recipient of the Harsen Clinical Prize and Medal of Columbia University and also received the Townsend Harris Medal offered by alumni of City College. When City College celebrated its hundredth anniversary, an honorary doctorate was conferred on Dr. Elsberg. On his sixty-fifth birthday the medical staff of the New York Neurological Institute presented him with a special volume of the bulletin of the institute, containing forty original articles contributed by his colleagues and students.

Cullen Francis Welty, San Francisco; University of Pennsylvania Department of Medicine, Philadelphia, 1890; specialist certified by the American Board of Otolaryngology; member of the American Medical Association; member and past president of the San Francisco County Medical Society and of the Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; served on the staff of the San Francisco Polyclinic; died in Franklin Hospital March 8, aged 82.

William Rudisel Fringer ⊕ Rockford, Ill.; Chicago Medical College, 1888; past president of the Winnebago County Medical Society; member of the American Academy of Ophthalmology and Oto-laryngology and the Chicago Ophthalmological Society; specialist certified by the American Board of Ophthalmology; fellow of the American College of Surgeons; served during World War I; for many years on the staff of the Rockford Memorial Hospital; died March 7, aged 84, of cerebral thrombosis.

George Clifford Gould, Mount Vernon, N. Y.; born Oct. 15, 1879; Columbia University College of Physicians and Surgeons, New York, 1903; member of the American Medical Association; fellow of the American College of Surgeons; formerly on the staff of the Manhattan Eye, Ear, Nose and Throat Hospital in New York; for many years associated with Mount Vernon Hospital; died in the Neurological Institute of the Columbia Presbyterian Medical Center, New York, March 26, aged 68, of brain tumor.

Edwin Rahn Fleming ⊕ Medford, Mass.; Jefferson Medical College of Philadelphia, 1904; member of the New England Obstetrical and Gynecological Society; specialist certified by the American Board of Obstetrics and Gynecology; affiliated with the Charles Choate Memorial Hospital, Woburn, and the New England Sanitarium and Hospital in Melrose; consulting obstetrician and gynecologist at the Lawrence Memorial Hospital; died March 4, aged 68, of cerebral hemorrhage.

Henry Randel Baremore Jr., ⊕ Akron, Ohio; University of Vermont College of Medicine, Burlington, 1913; an officer serving overseas during World War I; served on the staff of the City Hospital, where he died March 4, aged 60.

Ellsworth Francis Brandon, Edon, Ohio; Michigan College of Medicine and Surgery, Detroit, 1900; died in Blythe, Calif., March 10, aged 73, of coronary occlusion.

Paul Frederick Bremer, Philadelphia; Temple University School of Medicine, Philadelphia, 1906; died March 3, aged 69.

Arthur H. Brown, Oswego, S. C.; Medical College of the State of South Carolina, Charleston, 1900; died in the Tuomey Hospital, Sumter, March 6, aged 76.

Walter Herbert Brown, Youngwood, Pa.; University of Maryland School of Medicine, Baltimore, 1889; member of the American Medical Association; died March 4, aged 79, of coronary artery disease.

John Norris Bull, Plainville, Conn.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1878; member of the American Medical Association; for many years health officer; died March 7, aged 91.

Christian Frederick Carstens ⊕ Hibbing, Minn.; Johns Hopkins University School of Medicine, Baltimore, 1908; served as village and township health officer; during World War I served in the medical officers' training camp at Fort Riley, Kan., on the staff of Hibbing General Hospital, where he died February 19, aged 68, of cerebral hemorrhage.

Malcolm Hugh Clark, De Kalb, Miss.; University of Nashville (Tenn.) Medical Department, 1899; died in the Anderson Infirmary, Meridian, March 9, aged 71, of hemorrhages from gastric ulcers.

James W. Coon, Des Moines; Physio-Medical College of Indiana, Indianapolis, 1891; College of Medicine and Surgery (Physio-Medical) Chicago, 1904; member of the American Medical Association and the Missouri State Medical Association; died February 14, aged 84, of cerebral hemorrhage.

George W. Crock, Vicksburg, Miss.; Hahnemann Medical College and Hospital of Philadelphia, 1889; died in the Vicksburg Hospital March 2, aged 80, of carcinoma.

Henry Glover Davis, Franklin, Ind.; Ensworth Medical College, St. Joseph, 1909; died March 4, aged 65.

John Lewis Davis, Gordo, Ala.; University of Nashville (Tenn.) Medical Department, 1891; Vanderbilt University School of Medicine, Nashville, 1891; for many years mayor of Gordo; member of the American Medical Association; died March 2, aged 81, of coronary thrombosis.

Florence Le Verne Eby, New York; Loyola University School of Medicine, Chicago, 1945; certified by the National Board of Medical Examiners; interned at the Ellis Hospital in Schenectady; served a residency at the Willard Parker Hospital and New York Post Graduate Medical School and Hospital in New York; killed March 7, aged 26, when a tractor trailer truck skidded into the automobile in which she was riding.

Frederick Luther Everett, Springfield, Mass.; Cornell University Medical College, New York, 1902; member of the American Medical Association; died in a hospital at Watertown, N.Y., March 6, aged 75.

Samuel D. Fry, Ladonia, Texas; Louisville, (Ky) Medical College, 1890; member of the American Medical Association; died February 27, aged 81, of of diabetes mellitus and heart disease.

Philip J. Genthner ⊕ Brooklyn; University of the City of New York Medical Department, 1886; died March 9, aged 85.

Bruce Lock Gilfillan ⊕ Keokuk, Iowa; Keokuk (Ia.) Medical College, College of Physicians and Surgeons, 1908; served during World War I; colonel, medical reserve corps, not on active duty; died March 6, aged 64, of coronary occlusion.

Lewis H. Graves, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1906; associated with the staff of the Stetson Hospital; died March 19, aged 66.

Eugene Everett Hamilton ⊕ Dayton, Ind.; Medical College of Indiana, Indianapolis, 1903; served as health officer of Grant County, N.D.; died March 9, aged 69.

Charles P. Harshbarger ⊕ Port Republic, Va.; Kentucky School of Medicine, Louisville, 1892; member of the county school board; associated with Rockingham Memorial Hospital, Harrisonburg; trustee of the Bridgewater (Va.) College; director of Rockingham National Bank; died March 22, aged 80, of coronary thrombosis.

Emanuel Alexander Henkle, New London, Conn.; Cornell University Medical College, New York, 1899; member of the American Medical Association; died February 26, aged 73, of carcinoma.

William Yetter Herrick ⊕ Wakeeney, Kan.; Keokuk Medical College, College of Physicians and Surgeons, 1901; for many years county health officer; city councilman; surgeon for the Union Pacific Railroad; examiner for draftees during World War I and II; died in Hadley Memorial Hospital, Hays, March 9, aged 77, of cerebral hemorrhage.

Clyde B. Hoffman ⊕ Kent, Wash.; Rush Medical College, Chicago, 1901; died March 5, aged 77, of heart disease.

Hiram D. La Plant, Waverly, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1891; died in Robert Packer Hospital, Sayre, March 5, aged 83.

John Francis Loomis, Marion, Ind.; Cincinnati College of Medicine and Surgery, 1890; member of the American Medical Association; past president of the Grant County Medical Society; formerly county coroner; served on the staff of Grant County Memorial Hospital; died in St. Petersburg, Fla., March 3, aged 93, of pulmonary embolus, following a fractured hip received in a fall.

Thomas B. Loughlen, Olean, N.Y.; University of Buffalo School of Medicine, 1890; member of the American Medical Association; affiliated with the Olean General Hospital; died February 25, aged 79, of a skull fracture received in a fall and cerebral embolism.

John A. McWilliams, Bucklin, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1881; died in St. Francis Hospital, Marceline, Mo., March 7, aged 90, of bronchopneumonia.

Theodore Maddux, Union, S.C.; Atlanta College of Physicians and Surgeons, 1902; member of the American Medical Association; served during World War I; died in Aston Park Hospital, Asheville, N. C., March 12, aged 73, of carcinoma.

Robert Bascom Miller, Goldsboro, N.C.; Medical College of Virginia, Richmond, 1898; member of the American Medical Association; past president of the Wayne County Medical Society; examiner for the draft board during World Wars I and II; affiliated with the Goldsboro Hospital; died March 6, aged 71, of heart disease.

Granderson Edgar Mitchell, Reed, Ky.; Kentucky School of Medicine, Louisville, 1898; member of the American Medical Association; died in a hospital at Henderson March 2, aged 77.

Leo Patrick Mooney ⊕ Graceville, Minn.; University of Minnesota Medical School, Minneapolis, 1927; died March 12, aged 51.

Leonard J. Munson, Wilmette, Ill.; Jenner Medical College, Chicago, 1906; formerly head of the medical bureau of Marshall Field & Company in Chicago; died in St. Luke's Hospital, Chicago, March 13, aged 72, of myocardial infarction.

Harry Willard Nichols, Brooklyn; Long Island College Hospital, Brooklyn, 1897; member of the American Medical Association; affiliated with St. John's and Long Island College Hospitals; died in the Methodist Hospital March 6, aged 71, of cerebral accident.

James Pratt Northrop ⊕ Picayune, Miss.; Tulane University of Louisiana School of Medicine, New Orleans, 1940; affiliated with the Martin Sanatorium; died March 2, aged 33, of an accidental gunshot wound.

John Charles O'Brien ⊕ Greenfield, Mass.; University of Vermont College of Medicine, Burlington, 1887; an Affiliate Fellow of the American Medical Association; on the staff of Farren Memorial Hospital, Montague City, where he died March 18, aged 84, of uremia and arteriosclerosis.

Charles Ralph Ozias, Kansas City, Mo.; University of Oklahoma School of Medicine, Oklahoma City, 1914; served during World War I as an officer in the regular army; died March 10, aged 56.

Azro John Pardee ⊕ Ashtabula, Ohio; Cleveland-Pulte Medical College, 1912; formerly city health officer; served as medical officer in charge of the U. S. Public Health Service Relief Station, on the staff of the Ashtabula General Hospital, died January 18, aged 62.

Noah G. Pirkle, Buford, Ga.; University of the South Medical Department, Sewanee, Tenn., 1898; died January 5, aged 75.

Abraham Potasnic, Meridian, Miss.; Mississippi Medical College, Meridian, 1911; died January 7, aged 56.

Dalton Harbord Ray, Mayfield, Ky.; University of Louisville Medical Department, 1907; member of the American Medical Association; president of the Graves County Medical Society; an officer during World War I; served as city and county physician; died January 23, aged 64.

Allen Pierce Richmond, Hingham, Mass.; Bellevue Hospital Medical College, New York, 1889; member of the American Medical Association and the New Hampshire Medical Society; for many years practiced in Dover, N.H., where he was on the staffs of Hayes and Wentworth hospitals; died March 17, aged 87, of chronic myocarditis.

Carl James Robertson ⊕ Captain, U. S. Navy, retired, Coronado, Calif.; Detroit College of Medicine and Surgery, 1916; entered the U. S. Navy on Nov. 1, 1920, and retired March 1, 1941, for incapacity resulting from an incident of service recalled to active duty during World War II; fellow of the American College of Surgeons; died in the U. S. Naval Hospital, San Diego, February 16, aged 56, of hypertensive heart disease.

Samuel Herbert Rutledge, Rogers City, Mich.; Queen's University Faculty of Medicine, Kingston, Ontario, Canada, 1904; member of the American Medical Association; owner of the Rogers City Hospital; died recently, aged 69, of Parkinson's disease.

N. Louis Schappert ⊕ Wilkes-Barre, Pa.; Medico-Chirurgical College of Philadelphia, 1896; past president of Luzerne County Medical Society; member of the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; on the staff of Wilkes-Barre General Hospital; died March 9, aged 71.

Aaron Franklin Schmitt, Minneapolis; Rush Medical College, Chicago, 1902; member of the American Medical Association; past president of the Southern Minnesota Medical Association; formerly member of the state board of medical examiners; fellow of the American College of Surgeons; died March 15, aged 78, of coronary disease.

Max Seide, Brooklyn; New York Homeopathic Medical College and Hospital, New York, 1927; medical superintendent of the Cumberland Hospital; formerly deputy medical superintendent and superintendent of Coney Island Hospital; served in the medical corps of the Austrian Army during World War I; died February 23, aged 49, of coronary occlusion and diabetes mellitus.

Louis M. Smirnow, Brooklyn; Yale University School of Medicine, New Haven, 1895; member of the American Medical Association; died February 23 aged 73.

John Fogg Smith, Paulsboro, N.J.; University of Pennsylvania Department of Medicine, Philadelphia, 1900; died February 23, aged 74, of cerebral hemorrhage, hypertension and chronic interstitial nephritis.

S.F. Smith, Glennville, Ga.; University of Georgia Medical Department, Augusta, 1902; died February 19, aged 73.

Carl Louis Spohr, Columbus, Ohio; Starling Medical College, Columbus, 1895; member of the American Association; emeritus clinical professor of pathology at the Ohio State University College of Medicine; affiliated with the University, St. Francis and Children's hospitals; died March 3, aged 77, of cerebral hemorrhage.

Dudley Stennis, Newton, Miss.; University of Nashville (Tenn.) Medical Department, 1900; member of the American Medical Association; affiliated with the Newton Hospital, where he died February 26, aged 72, of coronary occlusion.

Franz O. Stern, St. Louis; Julius-Maximilians-Universitat Medizinische Fakultat, Wurzburg, Bavaria, Germany, 1932; member of the American Medical Association; affiliated with the Jewish Hospital, where he died February 25, aged 40, of arteriosclerosis.

Frank Adolph St. Sure ⊕ San Diego, Calif.; Rush Medical College, Chicago, 1909; died January 24, aged 67, of cerebral hemorrhage, hypertension, generalized arteriosclerosis and bronchopneumonia.

Ross Oren Taylor, San Diego, Calif.; University of Illinois College of Medicine, Chicago, 1912; member of the American Medical Association; died February 25, aged 59, of acute left ventricular failure and myocarditis.

George Alton Tibbetts ⊕ Portland, Me.; Medical School of Maine, Portland, 1915; fellow of the American College of Surgeons; past president of the Cumberland County Medical Society; member of the New England Surgical Society; served overseas during World War I; for many years on the staff of Maine General Hospital; died February 21, aged 61, of coronary thrombosis

John Robert Tobin, Elgin, Ill.; Rush Medical College, Chicago, 1901; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with Sherman and St. Joseph's hospitals; died February 23, aged 71, of carcinoma of the colon and diabetes mellitus.

Charles Holmes Traber ⊕ Reedley, Calif.; Chicago College of Medicine and Surgery, 1913; formerly mayor; affiliated with the Reedley Hospital; died March 19, aged 74, of cerebral hemorrhage.

John Trotter ⊕ Troy, N.Y.; University of Vermont College of Medicine, Burlington, 1898; fellow of American College of Surgeons; formerly vice president of the Vermont State Medical Society; affiliated with the Samaritan Hospital and Troy Orphan Asylum; died February 28, aged 73, of coronary thrombosis.

Wilfrid Trudeau, Fall River, Mass.; Victoria University Medical Department, Coburg, Ontario, Canada, 1884; died February 28, aged 88, of arteriosclerotic heart disease.

James W. Twitchell, Belleville, Ill.; Marion-Sims College of Medicine, St. Louis, 1898; member of the American Medical Association; affiliated with St. Elizabeth Hospital, where he died March 11, aged 78, of heart disease.

Harry D. Vail, Seattle; Western Reserve University Medical Department, Cleveland, 1903; at one time practiced in Quincy, where he served as county coroner and as mayor; died February 24, aged 71.

Luther Edgar Vincent, St. Louis; Meharry Medical College, Nashville, Tenn., 1917; affiliated with Peoples and St. Mary's Infirmary; died February 18, aged 64, of cardionephritis.

Henry Morris Weisman ⊕ New York; University and Bellevue Hospital Medical College, New York, 1910; chief pediatrician at the Bronx Hospital; formerly associate pediatrician in the outpatient department at Mount Sinai Hospital; died March 16, aged 63, of arteriosclerotic heart disease.

Alexander A. Whamond, Chicago; Rush Medical College, Chicago, 1896; member of the American Medical Association; died in the Norwegian-American Hospital March 7, aged 77, of diabetes mellitus and coronary thrombosis.

John Emerson Whitehill, South Bend, Ind.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; member of the American Medical Association; died March 23, aged 63.

Charles LaFayette Williams, Independence, Kan.; Northwestern University Medical School, Chicago, 1900; served on the staffs of Christ Hospital, Topeka, St. Anthony Hospital, Dodge City and Mercy Hospital; died in Huntington Station, Long Island, N.Y., March 1, aged 79, of a fractured femur, diabetes mellitus and nephritis.

Harley Arthur Williams ⊕ Cleveland; Western Reserve University School of Medicine, Cleveland, 1929; assistant clinical professor of medicine at his alma mater; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; associated with University Hospitals; died March 5, aged 47.

Julia L. Woodzicka, Royalton, Wis.; Northwestern University Woman's Medical School, Chicago, 1899; died in Waupaca, February 22, aged 82.

Gordon Dulin Wright, St. Joseph, Mo.; University Medical College of Kansas City, Mo., 1898; member of the American Medical Association; affiliated with the Missouri Methodist and St. Joseph's hospitals; died February 27, aged 76, of heart disease.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 29, 1948.

The British Medical Association Accepts the National Health Service

A meeting of the Representative Body of the British Medical Association has accepted the National Health Service scheme of the Government by a majority of 167 votes to 148. As the minority was so large, requiring only 10 votes to be converted into a majority, the opposition was very strong. The chairman, Dr. Dain, moved that in spite of the insufficiency of the safeguards and the misgivings of a substantial section of the profession the Representative Body is prepared to advise the profession to cooperate in the new service on the understanding that the Minister will continue negotiations on outstanding matters. The concessions made by the minister, he said, went a long way toward establishing the freedoms thought by the profession to be essential. It was necessary to face the fact that a cleavage of opinion existed. He hoped that the members would stand together. An amendment was offered to advise the profession to cooperate in the new service only on condition that the results of continued discussion were concrete and acceptable to all sections of the profession. The Minister said that they were free to join the service or remain outside; but he was using the big stick by refusing compensation for loss of the right to sell practices unless doctors signed on the dotted line by July 5. "Sign or starve" was a strange interpretation of the word freedom. Lord Horder, in supporting the amendment, referred to the chairman's appeal for unity. It would not help any of them to be together if they sank. A few persons still swimming were better than the whole number drowned. It was fear of loss of compensation which caused men and women to sign. He appealed for resistance, which would grow and eventually succeed against defeatism. Replying, the chairman denied defeat and said that the profession had gained a great victory over the Government. It was no use talking about fighting when 26 per cent of the practitioners under the previous National Health Insurance Act in England and 36 per cent in Scotland had already accepted. The amendment was defeated. As stated above, the meeting accepted the National Health Service by a small majority - a result which no one can regard as satisfactory, particularly when the fact is taken into account that acceptance was largely the result of fear and did not indicate approval of the Act. Moreover, the plebiscite showed disapproval of the Act by a large majority of the profession, but not so great as the British Medical Association laid down as the condition for refusal to cooperate.

Lord Horder on the Socializing of Medicine

In previous letters to THE JOURNAL it was pointed out that in the struggle over the National Health Service the negotiators for the profession, while fighting about details, had failed to make any stand in regard to the fundamental evil—the socializing of the whole practice of medicine. At last this evil has been emphasized in an address to the Society of Individualists by Lord Horder. He said that the taking over of Medicine by the State would be as disastrous as was the domination by the Church in the Middle Ages—a greater disaster because at least the Church was cultured. The boot of bureaucratic control threatened to stamp on a plant whose development is so little understood "We have not won this fight" he said, "but we have not lost it. I propose to persist in it, and there are many with me in this, men and women of my own calling. So long as the Minister of Health possesses such tremendous power he can turn the screw on the economic or administrative side of the machine, until the doctors' freedom or the freedom of medicine is entirely lost."

The Treatment of Spastic Paralysis in Children

At a meeting organized by the British Council for the Welfare of Spastics on the Medical, Educational and Social Aspects of the Cerebral Palsy Problem, Professor Alan Moncrieff opened the discussion. He said that American figures suggested that there might be between 600 and 700 children up to the age of 16 with cerebral palsy in every million of population who could be trained to various degrees of efficiency, but British surveys were not yet complete. Treatment comprised specialized physical therapy and occupational therapy, training in correct speech and instruction of parents on how to get the best out of their crippled children. Three types of organization were required—diagnostic and instructional centers for outpatients, inpatient residential units for the severer types and schools for the physically handicapped with visiting instructors.

PARIS

(From Our Regular Correspondent)

April 30, 1948

A New Test in Liver Diseases

At a meeting of the National Academy of Medicine, Professor M. Loeper presented a new test which makes possible an estimate of the action of the liver in the acid-base regulation and especially in the destruction of the fatty ketogenic acids. The author has made a study of the alkaline reserve in 40 persons with hepatic disease, serious in 20 of them. The acid-base unbalance is, he says, in proportion to alteration of the cells. Since sodium salicylate initiates in most patients an unnoticeable lowering of alkaline reserve of 4 to 5 volumes per cent, the author used this product as a test of hepatic insufficiency. He gave this salt for two days to 40 patients and found that the alkaline reserve falls more with hepatic disease than with normality; the discrepancies between initial figures and those following the administration of sodium salicylate are from 8 to 14 volumes. The decrease is more noticeable in cirrhotic persons and in subjects with large neoplasms and acute icterus. The effect of sodium salicylate can be lessened by the simultaneous administration of hepatic extracts, insulin and sulfur. Loeper and Parrod reported previously their research on the innocuity of salicylsulfuric acid, which does not produce the same variation of alkaline reserve or the same clinical signs of intoxication as pure salicylate. The salicylic test not only provides a means to measure the function of the liver and its cellular activity but brings a new element in the prognosis of hepatic diseases and indicates the value of a therapy with liver extracts, sugar and sulfur.

First International Congress of the Surgical Film

The first International Congress of the Surgical Film was held April 7 in Paris under the presidency of the Minister of Public Health and the patronage of the dean of the Paris Faculty of Medicine. Over 2,500 persons attended. Great Britain presented a

sound film by Professor Stanford on the surgical treatment of the blue disease (persistency of Botalli's duct); the United States, a sound color film on anesthesia with curare; the Soviet, the surgical realization of artificial esophagus in patients with gastric fistulas by Professor Youdine; Switzerland, Bacht's obstetric maneuver; France, lumbodorsal sympathectomy according to Smithwick's process, subtotal colectomy, commented on by Professor Patel; surgical treatment of cancer of the larynx, commented on by Professor Portmann; surgical treatment of sciatica by Professor de Seze; surgical treatment of cancer of the rectum by Professor d' Allaines. Dr. Cherigie commented on a film representing an operation on his own hand, which had been injured in an airplane accident, performed by Dr. Sterling Bunnel of San Francisco.

Modifications of Bacteria by Penicillin

A. Boivin, E. Tulasne, R. Vendrely and R. Minck have succeeded in rendering visible the nucleus of numerous bacteria and cocci by means of a special staining process. After fixation, treatment by ribonuclease to eliminate the ribonucleic acid of the cytoplasm and staining with Giemsa's stain, the nucleus alone remained basophilic on account of the desoxyribonucleic acid it contains. With this staining method the authors have been able to observe the mechanism of action of penicillin. A strain of Staphylococcus aureus and Bacillus coli cultivated on ordinary gelose always appeared uniformly basophilic with direct staining; ribonuclease shows in B. coli sometimes two to three nuclei, in the staphylococcus one to three nuclei. Staphylococcus cultivated in the presence of 0.075 penicillin units per cubic centimeter and B. coli cultivated in the presence of 300 units per cubic centimeter do not appear uniformly basophilic in any phase with direct staining. In the latent phase they are larger, especially the colon bacilli, which continue to grow in length, forming long threads (scores to hundreds of microns) with active multiplication of their nuclei (scores to hundreds). On certain points, ribonuclease shows abundant nuclear matter (desoxyribonucleic acid) appearing in various forms. In the staphylococcus under the influence of penicillin ribonuclease shows three to five nuclei per cocci in the latent phase. After a longer conctact with penicillin, staphylococci and B. coli undergo lysis. The authors conclude that penicillin, at the beginning of its action, does not hinder the nuclear division of microbes but restrains the cytoplasmic division.

BUENOS AIRES

(From Our Regular Correspondent)

May 26, 1948.

A New Antibiotic

The Argentine Ministry of Agriculture announces a new antibiotic of the group of organisms which produce streptomycin. The agricultural engineer Augusto P. Cercós, working with Septoria Nodorum Berk on a fungus which causes a serious disease of crops, observed an infection of their cultures by a micro-organism coming from the air and that the colonies it produced had a great antibiotic effect on certain bacilli. The fungus was cultured and found to belong to the Actinomyces group. The active substance which was extracted is extremely heat resistant, easy to produce and extract and has an intense inhibitory action on some gram-positive bacilli and a minor but still appreciable action on gram-negative bacilli, some of which are pathogenic for plants. The new antibiotic is called "actinomicelina," and experiments with bacteria which infect man have been initiated.

New Plan For The Medical Curriculum

The new plan elaborated by a special commission of eleven professors of the Medical Faculty of Buenos Aires aims to diminish the theoretical and to intensify the practical studies, to reintroduce the compulsory internship and to require the doctoral thesis before a jury. The plan becomes effective immediately. Topographic anatomy has been eliminated; physiology has been divided into physiology proper, biologic physics and biologic chemistry. In the specialties, dermatology and venereal diseases, ophthalmology, otorhinolaryngology, gynecology, urology, psychiatry and pathology of tuberculosis, the examinations have been eliminated and a certificate of the professor who is responsible for the practical studies has been substituted.

The student can undertake the studies of the following year only after having passed completely the examinations of the preceding year. The certificates for practical studies are valid only for two years, so that students must continue their studies without interruption, as some did for personal or economic reasons. The school year has thirty weeks. The distribution of theoretical and practical classes during the year also has been reorganized. The hours per week vary in the six different years, from 22 to 29, and annually from 675 to 877.

During the one year compulsory internship after the examination on clinical medicine has been passed, the daily work is at least six hours, and assistance on an obstetric service, for two and one-half months, is compulsory. The study of medicine comprehends, including the practical year, seven years; i.e., as much time as it did before, when the practical year did not exist.

Paroxysmal Ventricular Tachycardia

The various causes of ventricular tachycardia, its prognosis and treatment and the modifications observed in the electrocardiogram induced Dr. F. C. Arrillaga, at the Medical Faculty of Buenos Aires, and Dr. L. de Soldati to study a group of 4 patients. Most of the paroxysms observed (three in 1 patient, one in another) could be controlled. In all of them the electrocardiographic post-tachycardiac syndrome observed consisted in a depression of the ST segment, negativity of the T wave and (less frequently) a lengthening of the Q-T interval. The post-tachycardiac syndrome assumed different characteristics, depending on the direction of the electric axis during paroxysm, i.e., according to the location of the focus which originated the stimuli. The syndrome was reversible in a short time in one case. In another case it persisted more than two months, one reason which induced them to consider that it is due to ischemia of the myocardium.

Practically all drugs known as efficient were administered in treating these patients. The only really active drug, however, was quinidine, particularly when given intravenously. One patient whose condition was refractory even to large doses of quinidine reacted well after receiving a large dose of digitalis intravenously ninety minutes beforehand. The authors concluded that a great percentage of patients suffering from paroxysmal ventricular tachycardia do not suffer from earlier organic cardiopathy, which may develop afterward. The absence of cardiopathy does not necessarily modify the usually serious prognosis, which to a certain degree is not related to the duration of the paroxysm.

Correspondence

MEDICAL CONDITIONS IN GREECE

To the Editor:—The Medical Mission of the Unitarian Service Committee after a month in Greece is nearing the end of its stay in that country. The Mission includes two internists (P. D. White, chairman, and C. M. Jones), a pediatrician (E. L. Pratt), a surgeon (E. L. Howes), a neurosurgeon (A. R. Elvidge), and an anesthetist (R. D. Dripps), two dentists and oral surgeons (R. F. Sognnaes and H. De Wilde), and a pharmacologist (H. B. Van Dyke), bacteriologist (A. M. Pappenheimer Jr.) and physiologist (R. W. Gerard). Since the entire group meets daily to discuss the varied experiences of the men, a fairly complete coverage has been achieved.

The two medical schools are at Athens and Salonika, the latter only five years old in a young university. The continued wars which have ravaged this unfortunate land have left heavy imprints on the universities and hospitals. Several important buildings were badly damaged by the Germans, and even more by the guerilla fighting; many are still pock-marked with bullet hits. Equipment was mostly destroyed or lost. Much of the space of the preclinical science buildings in Athens is still transformed into a busy military hospital handling some 50 new casualties a week in its three hundred beds, with a mortality of 1.5 per cent. (Incidentally, land mines laid by the guerillas are responsible for many casualties, especially blindness and amputations.) Also, many of the physicians are removed from teaching and practice by needed army service. The inflation has impoverished the academic teachers. Consequently, medical science is only slowly struggling up from complete inactivity. Yet a small number of able and energetic men remains active, and it is heartening to see some significant research in progress.

The peak of the postwar tide forced 1,300 freshmen medical students on Athens (and 1,800 on the one dental school, also there), and even this year there are classes of over 300 at Athens and 200 at Salonika. Two hundred graduates a year would meet the needs of the country, and, despite great efforts, the press of students is preventing their obtaining a satisfactory preclinical experience. Students may even be taking surgery before anatomy. Hospital facilities are also strained to the limit, with only 8,000 beds available in the Athens area for a population of 1,500,000, and new buildings, nurse training and the like have high priority.

Hospital and clinic practice, at least by the recognized physicians and surgeons, is at a high level. The doctors have well developed clinical skill and, even with limited facilities for roentgenologic, clinical and other laboratory services, make good diagnoses. Technical surgical work is excellent, especially in gastric resection, which is the treatment of choice for the very prevalent peptic ulcers. Plastic and intrathoracic surgery is less well developed. Preoperative and postoperative care is more limited than at home, and anesthesia as a medical specialty is still unknown. Measures to relieve pain in childbirth are seldom used. The solicitude for a patient's comfort, psychologic state and general welfare is also—as elsewhere in central Europe—less developed than with us, with our acute consciousness of the individual. The 2,500 monks of Mount Athos are essentially without medical care, yet our brief visit disclosed many with serious illness.

Nutrition now seems reasonably good, even in the half-million refugees from guerilla territory supported entirely by the government, but more calories and better protein are desirable. The traces of recent starvation (2,000 of the 7,000 in Lavrion died) are apparent in the size of the children—girls of 12 are judged as 6 or 7 years of age—and in the manyfold increase in tuberculosis. There are now some 300,000 cases of tuberculosis in Greece and only 5,000 beds in sanatoriums. Streptomycin is being used vigorously but often wastefully, and BCG vaccination is being introduced on a large scale by a Danish Red Cross mission. Diphtheria is another important public health problem, immunization not having been pushed as it might be with locally prepared toxoid. Echinococcosis is also prevalent and, although operative treatment is excellent, no preventive measures are being taken with regard to canine carriers or otherwise.

In contrast, a splendid DDT spray program, initiated by the United Nations Relief and Rehabilitation Administration has cut malaria to 5 per cent of its recent prevalence. Typhus is also well under control, and the general incidence of disease seems much as at home. The public health work of the American Mission for Aid to Greece, as indeed all phases of the work of this group, is well carried out and much appreciated by the government and people of Greece. These people have suffered greatly, but they are able and eager to rebuild. They do need help to enable them to help themselves. In the medical field this has been the central purpose of the medical mission. By working through the universities, the scientific and clinical teachers, the medical mission is reaching the future doctors and medical scientists of Greece. With lectures on newer observations, clinical conferences, ward rounds and operations, demonstration teaching, new books and apparatus on a small scale and friendly contacts that will lead to increasing interchange of personnel and experience, there is some basis for the belief that the Unitarian Service Committee's medical group will succeed in its mission.

R. W. GERARD, M.D., Ph.D.,
University of Chicago,
Athens, Greece.

Medical Motion Pictures

FILM REVIEW

Scabies 1946. 16 mm., black and white, sound, 1,300 feet (1 reel), showing time thirty-eight minutes. Prepared for the Ministry of Health by the Ministry of Information, London, and procurable on loan from the American Medical Association, Committee on Medical Motion Pictures, 535 North Dearborn Street, Chicago 10.

This excellent teaching film of the British Information Services covers the problem of scabies, the natural history (life cycle) of the Sarcoptes and the clinical and microscopic diagnosis of the condition. The method of extracting the mite from the skin is excellent. Treatment is critically discussed and anti-scabies drugs are reviewed; since the film was made several other equally effective preparations have come into general use. Particularly instructive is the presentation of the therapeutic management of the cases with the necessary emphasis on the family and group examination of the infected persons. The hygienic measures for the eradication and prevention of scabies are also fully considered.

This film can be highly recommended for county medical society meetings, industrial medicine and medical students. The black and white photographs and photomicrographs are beyond reproach. The speech of the British narrator is clear and distinct.

The Medical Motion Picture—Its Development and Present Application. 16 mm., color, sound, 1,100 feet (one reel), showing time thirty minutes. Produced for the American Medical Association in 1947 by Audio Productions, Inc., New York; technical adviser, Ralph P. Creer. Procurable on loan from the Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn Street, Chicago 10.

The film demonstrates applications for medical films: it neither asserts nor denies that a film can shake a thermometer, but it does prove that a film could show how a thermometer is shaken. It shows that by various camera and film production technics a film can improve on first-hand observation, facilitating the transfer of knowledge or skill from one person to another. It is to be regretted that the film did not carry demonstration a step further and show how and when films are best used in medical teaching—for here it is that most of the misconceptions of the role of the medical motion picture exist.

The historical development of motion picture materials and technics is seen in a series of "period" sequences. Improvements in photographic reproduction are demonstrated by comparison of three cinematic records made at intervals between 1916 and 1930. All concern the same action (caesarean section), and the comparative merits of orthochromatic, panchromatic and color film are easily observed. Similarly, other advantages discovered with time are exhibited through excerpts from films employing these technics--sound film, diagrammatic animation, photomicrography, high speed camera work for slow motion, and combination of the motion picture camera with roentgen ray photography. The advantages of the film as a means of preserving unusual clinical material for student observation are demonstrated; an early silent, black and white record of a case of Oppenheim's disease (congenital myotonia); later color films of two congenital anomalies (ectopic heart and complete prolapse of the cloaca and urogenital sinus); and a clinical record, in sound, of speech difficulties in a case of myasthenia gravis, before and after treatment. Beautifully photographed sequences demonstrate three types of endoscopic cinematography in color—through the proctoscope, the laryngoscope and the gastroscope. The possibilities inherent here in extending clinical observation from small to large groups are exciting.

The last ten minutes of the film serve to illustrate both careful production planning and the decidedly worth while results thus obtainable. This is addressed to every man who has considered recording medical experience for the scrutiny of others. In a well planned and executed production the varied technics in motion picture photography are employed in a history of the diagnosis and management of a case of carcinoma of the thyroid with metastasis to the hip, treated with radioactive iodine. The mechanical sounds of the Geiger counter are recorded and reproduced, animated diagrams clarify certain involved points, and color reproduces faithfully physical characteristics. The technic of diagnostic aspiration biopsy is demonstrated. This, together with the indications for the use of a radioactive isotope, provides yet another evidence of the value of medical films in bringing to the attention of the profession new technics and procedures, and thus expediting their adoption. The film warns the prospective producer of the problems of film-making. It is unfortunate that the warning to avoid the use of the master print for screening was not included. Too often valuable medical information has been lost because the original print wore out or was lost or destroyed. This motion picture should do much to clarify the role of the film in medicine and to extend its use. The selection of studies in the film are disposed to point to the advantage of films as additional teaching instruments and it is, of course, in the medical schools that the peculiar advantages of the film may be best utilized.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners in the basic sciences were published in THE JOURNAL, June 19, page 749.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: Parts I & II. Various centers, Sept. 13-15. Final date for filing application is Aug. 13. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: Written. Various Centers, July 16. Oral. Philadelphia, Oct. 10, Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York 22.

American Board of Dermatology & Syphilology: Oral. Groups A & B. Ann Arbor, Oct. 21-23. Final date for filing application is Aug. 2, 1948. Written. Ann Arbor, Sept. 9, Sec., Dr. G. M. Lewis, 66 E. 66th St., New York 21.

American Board of Internal Medicine. Written. Oct. 18. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3.

American Board of Neurological Surgery: Oral. Chicago, June 1949. Final date for filing application in Jan. 1949. Sec., Dr. W. J. German, 310 Cedar Street, New Haven, Conn.

American Board of Obstetrics and Gynecology: Part I. Various Centers, Feb. 4, 1949. Final date for filing application is Nov. 1. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh 1.

American Board of Orthopedic Surgery: Part II. Chicago, January 1949. Final date for filing application is August 15. Sec., Dr. Francis M. McKeever, 1136 W. 6th St., Los Angeles 14.

American Board of Otolaryngology: Examination. Chicago, Oct. 4-9. Sec., Treas., Dr. D. M. Lierle, University Hospital, Iowa City, Ia.

American Board of Pathology: Chicago, Oct. 8-9. Final date for filing application is Oct. 1. Sec., Dr. Robert A. Moore, 507 Euclid Ave., St. Louis.

American Board of Pediatrics: Oral. Seattle, Sept. 10-12. Atlantic City, Nov. 17-19. Written, July 30. Sec., Dr. Lee F. Hill, 718 Royal Union Bldg., Des Moines, Iowa.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the hometown of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis.

American Board of Psychiatry and Neurology: Oral. All Groups, San Francisco, October. Final date for filing application is July 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S. W., Rochester, Minn.

American Board of Radiology: Nov. Final date for filing application is Sept. 1. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Urology: Chicago, Feb. 12-16, 1949. Final date of filing application is Sept. 1. Sec., Dr. Harry Culver, Route #13, Sunnyside Rd., Minneapolis 4.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Food and Drug Acts: Spectro-Chrome Misbranded as to Therapeutic Value.—The defendant was convicted of introducing into interstate commerce misbranded devices intended for use in the treatment and prevention of disease. From such conviction he appealed to the circuit court of appeals, third circuit.

The devices in question consisted of a cabinet equipped with a 1,000 watt electric light bulb, an electric fan and water container for cooling purposes, two glass condenser lenses to focus the rays from the electric light bulb and five ordinary glass slides, each of a different color. The devices were accompanied by various pieces of printed matter, which contained statements relative to the therapeutic value of the devices in the cure, mitigation, treatment or prevention of disease and directions for their use. The directions called for "irradiating" the body of the patient with "attuned color waves" projected by the device through the colored glass slides. The particular slide or combination of slides required to produce the exact color said to be needed to treat a given disorder was specified in the "Spectro-Chrome Home Guide." The patient was advised to adhere to a designated diet. He was directed to subject himself to "irradiation" while facing south or lying in a north and south position with his head to the north. The "tonations" from the Spectro-Chrome were to be taken at times specified by the defendant in the "Favorscope," which it was alleged, was compiled on the basis of solar, lunar and terrestrial radiant, gravitational influence.

The government presented a large amount of evidence, which, if believed, was amply sufficient to support a finding by the jury that the labeling of the defendant's Spectro-Chrome device was false and misleading within the meaning of the Federal Food, Drug and Cosmetic Act, in that the device did not have the therapeutic value which the labeling claimed for it. The jury, said the court of appeals, evidently believed the government's evidence.

We have examined with care each of the points raised by the defendant, concluded the court of appeals, and we find each to be wholly lacking in merit. Our consideration of the case has left us completely satisfied that the defendant had a fair trial. Indeed, the court concluded, the trial judge, if anything, leaned over backward to afford him the fullest opportunity to establish his defense and submitted the case to the jury in a charge to which no objection was or fairly could be made. The judgment of the district court was accordingly affirmed. —*United States v. Ghadiali, 165 F. (2d) 957 (1948).*

Malpractice: Liability of United States for Negligence of Army Surgeon.—This was an action for damages under the federal Tort Claims Act. It came up for a hearing on a motion by the defendant to dismiss the complaint and was argued in the district court of the United States, district D, Maryland.

The question, said the district judge, was whether the act authorizes a suit by a former member of the military forces to recover damages allegedly caused by a negligent abdominal operation performed on the soldier on or about July 3, 1945, by an Army surgeon in the state of Virginia (the plaintiff being a citizen of Maryland), while both were on active duty. Among other things, the act itself provides that "'Employee of the Government' includes.... members of the military or naval forces of the United States" and that "'acting within the scope of his office or employment,' in the case of a member of the military or naval forces of the United States, means acting in line of duty."

The federal Tort Claims Act, said the district judge after thoroughly discussing the cases cited by both plaintiff and defendant, represents a decided departure by the United States with respect to the waiving of sovereign immunity. It is a comprehensive act which, subject to the exceptions therein contained, acknowledges liability of the sovereign for injuries and damages to property and persons generally where the damage results from negligence in the performance of duties by its employees. This comprehensive act was passed subsequent to the various special acts waiving immunity under certain conditions and to a limited extent. Outside of the specific exceptions it applies to "any claim against the United States, for money only, accruing on and after January 1, 1945." It is also made expressly clear that it applies (subject to exceptions concerning combatant activities) to damages occasioned by the negligent action of members of the military or naval forces of the United States acting in the line of duty.

Continuing, the court said that the only open question here seems to be whether the comprehensive authority "to adjudicate any claim" should be narrowed by construction to exclude a claim by military personnel arising from the negligent action of other military personnel while both were on active governmental service, by reason of the special relationship existing between the government and its military forces, and particularly in view of the administrative disability benefits provided for disabled veterans under long established congressional legislation. The district court concluded that it was not presently convinced that the broad and comprehensive language of the Tort Claims Act should be narrowed by construction to exclude a case not included in the numerous exceptions expressed in the act itself. The contention to the contrary, said the court, would seemingly bar any redress to a soldier for the negligent acts of other soldiers under any circumstance (combatant activities being specially excepted by the act). Thus, for instance, a soldier on furlough injured by the negligent action of another soldier on active duty as a result of an automobile collision, would not be entitled to sue under the Tort Claims Act. Accordingly, the defendant's motion to dismiss the complaint was denied.—*Jefferson v. United States, 74 F. Supp. 209 (1947).*

Malpractice: Verdict as to Cause of Cancer Cannot Be Based on Guess or Speculation.—This was an action to recover damages for the alleged negligent conduct of the defendant dentist. From a judgment for the plaintiff in the trial court, the defendant appealed to the United States Court of Appeals, District of Columbia.

The plaintiff, a man aged about 70, had been in delicate health for a number of years. In 1943 he procured a denture from a New York dentist; some sharp points or prongs on it caused a puncture wound in his tongue. When he first noticed the wound it was about the size of a pinhead. This wound caused him considerable pain and in September 1944 he consulted the defendant, a licensed dentist in Washington, D. C. By that time the wound was about the size of the phosphorous end of a match and exposed raw flesh. It showed no tendency to heal. The defendant expressed the opinion that the wound was caused by a faulty denture, warned the plaintiff to discontinue using it and agreed to make a new one. He also gave the plaintiff a pre-

scription for an antiseptic mouthwash, "metaphen" (nitromersol), and advised the plaintiff to use it on his tongue three times a day. According to the plaintiff, the defendant further told him that he could do as much for him as any physician. The wound continued to grow and spread, however, and by June 1945 covered a large part of the plaintiff's tongue. During that month the plaintiff consulted a general practitioner for a physical examination. The physician noticed the lesion and observed that the glands in the plaintiff's neck were swollen; he advised the plaintiff to go to a pathologist, who diagnosed the condition as cancerous. The plaintiff subsequently went to a cancer specialist who performed an operation on the glands of the plaintiff's neck. It was the plaintiff's contention that the treatment by the defendant dentist was the cause of the cancer.

At the trial three physicians were called by the plaintiff. The first, the general practitioner, testified that he knew about as much, and no more, on the subject of cancer as the average general practitioner in the District of Columbia. He admitted not only that he did not know whether the sore on the plaintiff's tongue was cancerous but that he did not know what caused the sore or the cancer. The pathologist testified that he did not know what caused the cancer or when the plaintiff's tongue had first become cancerous. In his opinion the application of "metaphen," either diluted or in full strength, would ordinarily have no deleterious effect. The plaintiff's medical witness, the cancer specialist, was asked whether, from his own examination or from any manifestations of cancer that he observed, he could testify as to when or how the cancer originated. He replied in the negative. He was unwilling to say whether the cancer had existed ten years or a much shorter period and testified that from his examination it was not possible to tell what the condition of the tongue had been one year prior to the time he saw it. He was likewise asked whether the wound in the tongue, if it was originally caused by a puncture from a sharp protruding object, would have caused a cancerous condition. He answered that he did not know, that the point was debatable.

A careful search of the record, said the Court of Appeals, discloses no word of testimony from any witness on which a jury could base a conclusion that the dental work done by the defendant, some months after the wound on the tongue developed, was the responsible cause of plaintiff's cancer; and there is likewise not a word of evidence to show any causal connection between the defendant's work in fitting and making the dentures and the cancerous condition. We hold, continued the court, that the record is wholly and entirely devoid of any evidence on which a jury could reach a conclusion that anything done by the defendant actually caused the plaintiff's cancer; hence, in telling the jury they might find that the defendant caused the cancer, the trial court erred. The subject matter of the controversy is the highly specialized subject of cancer, as to which laymen have no knowledge and as to which both court and jury must depend on expert evidence. Here, as we have seen, there is not a jot or tittle of evidence as to what caused the cancer. There is accordingly a total lack of evidence on which to base a conclusion that anything the defendant did or failed to do produced that result. Clearly the case is one in which the plaintiff must rely on his medical evidence. And this, given its full force and effect, goes no further than to show a possibility that irritation produced by the dentures made by the defendant might have produced or spread the cancer. This is not enough, concluded the Court of Appeals, and leaves the question wholly to guess and speculation. Accordingly, the judgment of the trial court was reversed and the case remanded for a new trial.—*Kasmer v. Sternal, 165 F. (2d) 624 (1948).*

Charitable Hospitals: Liability for Nurse's Negligence.—The plaintiff sued for damages for burns suffered while she was a patient in the defendant hospital. From a judgment for the plaintiff, the hospital appealed to the supreme court, appellate division first department, New York.

Following the plaintiff's return to her room after an operation under spinal anesthesia and while she was being given an intravenous injection, the plaintiff complained of feeling cold. At the doctor's direction a hospital nurse procured hot water bottles, which the doctor and nurse placed in the plaintiff's bed adjacent to her feet. According to the plaintiff's testimony, she complained of warmth within five minutes and thereafter at five or ten minute intervals repeatedly complained of a burning sensation. To these complaints the nurse paid no attention, until the plaintiff screamed in agony. Nurses and doctors then removed the bottles. According to the nurse's testimony, the bottles were removed on the first complaint. The plaintiff suffered a number of third degree burns.

The legal premise, from which consideration of this case must start, said the court on appeal, is that the hospital, being a charitable organization, is not liable for the negligence of a doctor or nurse acting in a medical capacity. A hospital is liable, however, for the administrative acts of its servants and would be liable for the act of a nurse acting in an administrative capacity for the hospital rather than in a medical capacity for the patient. The legal basis for the distinction, the appellate division continued, is that medical service, although procured by the hospital, is professional service rendered to the patient by a doctor or nurse; administrative work, on the other hand, is part of the hospital service and is performed by servants of the hospital. The question, therefore, is whether the nurse's failure to remove the hot water bottles on plaintiff's complaints was an administrative failure or medical default.

In the trial court, liability was predicated on the theory that the use of the bottles was medical treatment, but the failure to remove them on complaint was administrative rather than medical neglect. The appellate division said that the use of the hot water bottles was a medical or professional service. As the use was medical, the default of the nurse, whether of misfeasance or nonfeasance, was likewise medical. It cannot be said that failure to discontinue medical treatment in time is an administrative failure rather than a medical failure or that the complaints of plaintiff converted medical neglect into administrative neglect. The complaints might be considered sufficient notice to a prudent nurse that the treatment should have been discontinued, but her failure to respond to such notice was a failure of professional judgment. Liability could be imposed on the hospital, therefore, only by holding that the nurse had an administrative duty, over and above her professional duty, to heed the plaintiff's complaints and to remove the hot water bottles. Such a holding would not conform with reality, said the appellate division. The nurse was acting as a nurse, not as a servant doing administrative work, and her failure, whether of action or inaction, was nurse failure. Under the law the defendant hospital is not liable. Accordingly, the judgment in favor of the plaintiff was reversed and the case dismissed.—*Sutherland v. New York Polyclinic Medical School and Hospital, 75 N.Y.S. (2d) 135 (N. Y. 1947).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

75: 1-134 (Jan.) 1948

Survey of Patients with Juvenile Diabetes Mellitus. A.L. Chute. -p. 1.
Attempts to Infect Ameba Proteus with Poliomyelitis Virus. J. A. Toomey, W. S. Takacs and M. Schaeffer. -p. 11.
*Blood Levels of Penicillin with Oral Use of Buffered and Unbuffered Solutions: Studies on Series of Infants and Children. S. Q. Cohlan, J. M. Lewis and E. Seligmann. -p. 15.
*Epidemic Poliomyelitis in Children: Clinical Study, with Special Reference to Symptoms and Management of Bulbar Polioencephalitis. C. G. Grulee Jr. and T. C. Panos. -p. 24.
Functional Intestinal Obstruction on Congenital Neurogenic Basis in Infancy. W. W. Zuelzer and J. L. Wilson. -p. 40.
Titer of Antistreptolysin O in Human Serum and Cerebro-Spinal Fluid. W. W. Igersheimer. -p. 65.
Hyperlipemia Following Intravenous Infusion of Hypertonic Solution of Sucrose. W. Heymann and Mary E. Hartman. -p. 68.

Blood Levels with Oral Penicillin.--Stressing the advantages of oral administration of penicillin, Cohlan, Lewis and Seligmann show that a divergence of opinion exists as to the necessity of buffering penicillin for oral administration. Further data were needed under controlled conditions on the effect of the oral administration of buffered and unbuffered penicillin on the blood levels of infants and children. If acidity of the gastric juice plays a prominent role in the destruction of penicillin, it would seem that buffering penicillin would have less effect in securing higher blood levels in infants, since the *p*H of gastric juice is considerably higher in infants than in children. Studies were made on 16 children ranging in age from 2 to 12 years and on 14 infants, 10 days to 4 months of age. Comparable amounts of buffered and unbuffered penicillin were given. Dosage of penicillin ranged from 3,000 to 5,000 units per kilogram of body weight. Levels of penicillin in the blood were considerably higher in children who received the buffered preparation, whereas no appreciable difference in the concentration of penicillin in the blood was noted in infants with the buffered and with the unbuffered preparation. The authors regard it as necessary to use a buffer when penicillin is administered orally to children. On the other hand, the higher *p*H of the gastric juice of infants causes no appreciable destruction of penicillin in the stomach, and for this reason no buffer is necessary when the drug is administered orally to infants.

Epidemic Poliomyelitis in Children.—Grulee and Panos describe the symptoms and clinical management in 464 cases of acute poliomyelitis. Twenty-three per cent of all cases were of the bulbar type; all the deaths occurred in this group. Central cardiorespiratory failure was considered to be responsible for all but 1 of the deaths. Arterial hypertension was encountered in 85 per cent of cases of bulbar poliomyelitis. Encephalitic manifestations were present in 17 per cent of all cases studied. Prevention and treatment of hypoxia by interrupted aspiration of accumulated secretions, tracheotomy and administration of oxygen, the respirator or other means are emphasized.

American Journal of Ophthalmology, Cincinnati

31: 137-276 (Feb.) 1948

*Ocular Lesions Following Atomic Bombing of Hiroshima and Nagasaki. J. J. Flick. -p. 137.
Role of Diencephalon in Regulating Ocular Tension. E. Schmerl and B. Steinberg. -p. 155.
Cystic Malignant Melanomas of Uveal Tract. H. E. Kennedy. p. 159.
Periphlebitis Retinalis Associated with Intracranial Manifestations. E. R. Veirs. -p. 168.
Histologic Study of Experimental Corneal Transplantation. H. M. Katzin and P. K. Kuo. -p. 171.
Effects of Practice and Consistency of Repeated Measurements of Accommodation and Vergence. J. Brozek, E. Simonson, W. J. Bushard and J. H. Peterson. -p. 191.
Notes on History of Ophthalmology in Canada. J. A. MacMillan. -p. 199.
Concerning Choroiditis Proliferans. C. Yen. -p. 207.
Lymphocytoma of Orbit Successfully Treated by Roentgen Irradiation: Report of Case. S. Van Wien. -p. 209.

Ocular Lesions from Atomic Bombing.--Flick describes ocular lesions that are directly related to deficiency in blood elements and in no way directly related to the action of radiant energy on the eye. On repeated examinations of the same lesions it seemed likely that the exudative lesions represented milder involvement. Persons manifesting both hemorrhage and exudation were on the average closer to the site of the explosion and had lower white blood cell counts than did those with either hemorrhage or exudation alone. The witnessing of a transition from the fluffy exudate to the "Roth" type hemorrhage and preretinal hemorrhage was rather impressive. It would seem logical to conclude that local areas of the retina could become swollen by transudation of serum through the walls of hyperpermeable capillaries in the presence of anemia, oligocythemia and consequent lowered oxygen tension in the blood. If this process was to become so intense as to cause tissue breakdown in the lesion itself as a result of stasis and anoxemia, the extravasation of whole blood elements could occur, superimposing itself on the original lesion and coming to surround it as "the hemorrhage with the white center." The locations of these lesions near large vessels is explained by the increased intravascular pressure in vessels of larger size. In those persons who recovered from the hemopoietic depression, the ocular lesions were observed to disappear without residual damage to the eyes.

American Practitioner, Philadelphia

2: 357-428 (Feb.) 1948

Treatment of Ten Common Skin Diseases. J. G. Downing. p. 357.
Medical Management of Hypertension and Tests for Selection of Patients. J. Q. Griffith Jr. and M. A. Lindauer p. 369.
Sterility as Related to Benign Lesions of Uterus and Ovary. G. F. Douglas. -p. 374.
Acute Rheumatic Pericarditis. D. C. Peete. -p. 379.
Acute Pancreatitis: Study of 80 Patients. J. M. Howard and I. S. Ravdin. -p. 385.
Contributions to Clinical Electromyography: I. Case Report on Guillain-Barre Syndrome. P. Liebesny, H. Fleck and S. L. Frank. -p. 396.
Practical Approach to Gynecologic Diagnosis. W. J. Reich and M. J. Nechtow. -p. 401.
Rheumatic Fever. W. R. Akenhead. -p. 405.
Physiologic Basis for Treatment of Diabetic Acidosis. C. Moses. -p. 409.

Annals of Surgery, Philadelphia
127: 193-384 (Feb) 1948

Syndrome of Thrombotic Obliteration of Aortic Bifurcation. R. Leriche and A. Morel. -p. 193.
Problem of Maintaining Continuity of Artery in Surgery of Aneurysms and Arteriovenous Fistulae: Notes on Development and Clinical Application of Methods of Arterial Suture. H. B. Shumacker Jr. -p. 207.
•Conservative Surgery in Tumors of Bone with Special Reference to Segmental Resection. B. L. Coley and N. L. Higinbotham. -p. 231.
Closure of Colostomies. G. B. Sanders, H. Haffner and H. B. Lynn. -p. 243.
Modern Concepts of Ureteral Calculi. C. C. Higgins and J. G. Warden. -p. 257.
•Carotid Body Tumors. W. S. MacComb. -p. 269.
Mesenchymoma, Mixed Tumor of Mesenchymal Derivatives. A. P. Stout. -p. 278.
Lingual Goiter: Report of 3 Cases. E. Goetsch. -p. 291.
Concerning Surgical Treatment of Traumatic Injury of Upper Division of Brachial Plexus (Erb's-Type). A. Lurje. -p. 317.
Observations upon Patients with Penetrating Wounds Involving Cerebellum. J. E. Webster, R. C. Schneider and J. E. Lofstrom. -p. 327.
Subarachnoid Use of Vasoconstrictors in Spinal Anesthesia. R. J. Whitacre and J. K. Potter. -p. 338.
Method of Partitioning Liver Proteins and Its Application to Study of Effects of Acute Hemorrhage in Dog. W. H. Fishman and H. H. LeVeen. -p. 342.
Blood and Liver Proteins in Surgical Patients as Related to Protein Depletion. H. H. LeVeen and W. H. Fishman. -p. 352.
Simplification of Diagnosis of Varicose Veins. C. A. Steiner and L. H. Palmer. -p. 362.
Giant Intracanalicular Fibroadenoma of Breast: Report of Case. J. C. Clarke. -p. 372.
Massive Resection of Small Intestine. H. D. Cogswell. -p. 377.

Conservative Surgery in Tumors of Bone.—Coley and Higinbotham point out that in recent years there has been a growing tendency to rely more on surgical measures and less on roentgen therapy in neoplasms of bones. They have devoted considerable thought to the possibilities of procedures less radical than amputation and have come to the conclusion that the patient stands to benefit rather than to suffer from the surgeon's conservatism. The authors define conservative surgery as an elective operation which either avoids amputation entirely or which places it at a lower level with greater prospects of improved function. They discuss the more conservative measures and show that curettage, partial resection, segmental resection and excision are methods which may at times be used in lieu of amputation. If these procedures are successful in eradicating the primary tumor and in avoiding a local or regional recurrence, they may be considered as justified. High thigh amputation for osteogenic sarcoma and chondrosarcoma of the lower femur may in selected cases be a safe substitute for disarticulation of the hip and offers greater advantages to the patients who survive. Illustrative case reports are supplied.

Carotid Body Tumors.—MacComb discusses various aspects of tumors of the carotid body on the basis of 10 cases observed at the head and neck service of the Memorial Hospital in New York. Whereas some observers believe that the majority of these tumors are noncancerous, it has been shown in other series and in the present series that about half are cancerous. Microscopically, the benign tumors are found to be extremely vascular. Small cells predominate in a uniform pattern. In the more malignant group pleomorphism occurs. Most authors agree that tumors of the carotid body should be removed surgically. Yet the necessity of ligation of the common and internal carotid arteries occurs so frequently that, because of the high postoperative mortality, it might be better to refrain from this procedure when it is possible to be certain of the noncancerous nature of the tumor. In the present series of 10 patients the tumor of the carotid body was resected without injury to the arteries in only 3 instances. In the other 7 patients it was necessary to include the carotid arteries in the resection of the tumor. There were 4 postoperative deaths. Hemiplegia preceded death in each instance. Fatalities following ligations of the carotid arteries are usually the result of insufficient collateral cerebral circulation or an ascending thrombosis in the internal carotid artery. External compression of the common carotid artery, as described by Matas, is undoubtedly of value in testing for the efficiency of the collateral cerebral circulation. The use of increasing periods of daily external compression may be of some aid in improving the compensatory flow of blood through the circle of Willis. The author suggests the use of heparin postoperatively as a possible means of preventing an ascending thrombosis in the internal carotid artery.

Archives of Physical Medicine, Chicago
29: 71-122 (Feb.) 1948

Abuses and Pitfalls of Physical Medicine. R. Kovacs. -p. 71.
Use of Physical Therapy in Postoperative Management of Tendon Transfers and Grafts in the Hand. G. S. Phalen. -p. 77.
•Physiology of Respiration. As Applied to the Treatment of Bulbar Poliomyelitis. W. G. Kubicek, G. W. Holt and F. J. Kottke. -p. 84.
•Medulla Oblongata in Anoxia. E. Gellhorn. -p. 88.
Electromyographic Studies of Paralyzed and Paretic Muscles in Anterior Poliomyelitis. O. L. Huddleston and J. G. Golseth. -p. 92.
Evaluation of Training of Physical Educationists for Reconditioning and Rehabilitation. H. H. Clarke and E. C. Elkins. -p. 99.

Physiology of Respiration in Bulbar Poliomyelitis.—According to Kubicek, Holt and Kottke, many lives can be saved by the early correction of the respiratory deficiencies encountered in bulbar poliomyelitis. Because hypoxia quickly destroys neurons, the aim of oxygen therapy should be to maintain an uninterrupted normal arterial oxygen tension of at least 100 mm. of mercury. Examination of the hemoglobin saturation curve reveals that small decreases in the percentage of oxygen saturation of hemoglobin represent large changes in partial pressure of oxygen in solution in the plasma. The difference in partial pressure of oxygen between plasma and the fluid surrounding the oxygen-consuming cell is one of the factors which determines the rate at which oxygen flows from plasma to cell. Cyanosis is seldom detectable if saturation of hemoglobin is above 80 per cent. When cyanosis is first visible the flow of oxygen from capillary blood plasma to nerve cell may be decreased by at least 65 per cent; thus patients who become cyanotic usually succumb. Edema, perivascular infiltration, hemorrhage and debris may be considered as other important factors increasing the resistance to diffusion of oxygen from plasma to cell by the increased distance from capillary to cell, by the physical obstruction by particulate matter and by the increased oxygen consumption due to infiltrating white cells. If laryngeal and pharyngeal paresis are observed along with rise of temperature and increase in pulse rate, tracheotomy should be performed and oxygen therapy started immediately to prevent hypoxial damage to already infected nerve cells. Indecision in diagnosis and delay in treatment of hypoxia will fail to decrease the present high mortality rate of bulbar poliomyelitis.

Medulla Oblongata in Anoxia.—Gellhorn's physiologic studies of the effect of anoxia on the respiratory and circulatory system have shown that

in acute conditions anoxemic stimulation of the chemoreceptors of the sinoaortic region results in an increased respiratory volume and increased blood pressure. Elimination of the chemoreceptors causes respiratory and vasomotor failure under conditions of acute anoxia. Data in the physiologic literature suggest that in chronic anoxia respiration and possibly blood pressure are regulated through the medullary centers alone. These data make it understandable that even mild degrees of chronic anoxia may have fatal effects if they act on diseased medullary neurons. This seems to be the physiologic rationale for oxygen therapy in bulbar poliomyelitis.

Cancer Research, Baltimore
7:417-480 (July) 1947

Inhibiting Effect of Ethyl Urethane on Development of Lymphatic Leukemia in Rats. J. B. Murphy and E. Sturm. -p. 417.
Electron Microscope Study of Chicken Tumor Cells. A. Claude, K. R. Porter and E. G. Pickels. -p. 421.
Some Morphologic Features of Cultured Rat Sarcoma Cells as Revealed by Electron Microscope. K. R. Porter and Helen P. Thompson. -p. 431.
Role of Sebaceous Glands and Hair Follicles in Epidermal Carcinogenesis. V. Suntzeff, C. Carruthers and E. V. Cowdry. -p. 439.
Carcinogenic Activity of 2-Acetaminofluorene. R. H. Wilson F. DeEds and A. J. Cox Jr. -p. 444.
Cytotoxic Effect of Avian Lymphoid Tumor Antiserum. B. R. Burmester. -p. 459.
Presence and Significance of Bound Aminoazo Dyes in Livers of Rats Fed Para-Dimethyl-Aminoazobenzene. Elizabeth C. Miller and J. A. Miller. -p. 468.

Journal of Clinical Endocrinology, Springfield, Ill.
8:1-110 (Jan.) 1948

Results of Administration of Anterior Pituitary Adrenocorticotropic Hormone to Normal Human Subject. H. L. Mason, M. H. Power, E. H. Rynearson and others. -p. 1.
Clinical Studies with Pituitary Adrenocorticotropin. P. H. Forsham, G. W. Thorn, F. T. G. Prunty and A. G. Hills. -p. 15.
Further Studies on Metabolism of Therapeutic Doses of Natural Estrogens in Human Subjects. C. L. Stealy and B. F. Stimmel. -p. 67.
Cytologic Cycle of Urinary Sediment and Its Parallelism with Vaginal Cycle. E. B. Del Castillo, J. Argonz and C. G. Mainini. -p. 76.
Social and Psychologic Readjustment of Pseudohermaphrodite Under Endocrine Therapy. Rita S. Finkler.-p. 88.

Journal of Immunology, Baltimore
58:1-108 (Jan.) 1948

Plasma Cellular Reaction and Its Relation to Formation of Antibodies in Vitro. Astrid Fagraeus. -p. 1.
Demonstration of "M" Protein in Culture Filtrates of Hemolytic Streptococci of Group A. J. Olarte. -p. 15.
Shigella Rio, New Type of Shigella. A. J. Weil, A. de Assis and H. Slafkovsky. -p. 23.
Study of Role of Thymus and Spleen in Formation of Antibodies in Rabbit. T. N. Harris, J. Rhoads and J. Stokes Jr. -p. 27.
Responses of Human Subjects to Vaccines in Saline-in-Mineral Oil Emulsion: I. Shigella Paradysenteriae Vaccines. S. Mudd, S. P. Halbert and J. Smolens.-p. 33.
Id.: II. Hemophilis Pertussis Vaccines. S. Mudd, Harriet M. Felton and J. Smolens. -p. 41.
Purified Animal Viruses. J. W. Beard. -p. 49.

Journal of Nervous and Mental Diseases, New York
106:619-718 (Dec.) 1947

Serial Electro-Encephalograms in Brain Injury. M. W. Laufer and R. F. Perkins. -p. 619.
Neurologic Examination of the Soldier. C. J. Bellis. -p. 631.
Three Types of Thinking Disorder: Investigation of Behavior on Special Tests of Schizophrenics, General Paretics and Cerebral Arteriosclerotics. H. A. Hashkin. -p. 650.
Follow-Up Study of Army Enlisted Psychoneurotic Dischargees. F. Feldman and E. Kezur. -p. 671.
*Tubercle Bacilli in Cerebrospinal Fluid of Dementia Precox. R. A. Darke. -p. 686.

Tubercle Bacilli in Dementia Precox.—Darke says that the question of a positive relationship between tuberculosis and dementia precox recurs periodically. In the studies presented here a total of 20 spinal fluids from psychotic patients without tuberculosis were examined by centrifuging the fluids, injecting the supernatant fluid subcutaneously into the groin of guinea pigs and staining and examining the sediment. The spinal fluids were examined also for sugar, protein and cells; Kolmer and colloidal gold curve tests were made. There was no evidence that tubercle bacilli were present in the nontuberculous patients, and the data obtained thus tend further to confirm the observations of those who believe that there is no etiologic relationship between the tubercle bacilli and schizophrenia.

Military Surgeon, Washington, D. C.
102:85-168 (Feb.) 1948. Partial Index

Priorities in Psychiatric Treatment of Veterans. D. Blain. -p. 95.
*Nagasaki Survivors as Seen in 1947. S. Warren.-p. 98.
Research Grants Program of United States Public Health Service. C. J. Van Slyke. -p. 102.
Orthodontic Properties of Certain Prosthetic Restorations. N. A. Harper. -p. 112.
Selection and Placement of Naval Recruit. F. L. McDaniel. -p 114.
Problem of Chronic Arthritis. E. R. Eaton. -p. 117.
Practical Considerations in Treatment of Burns. J. M. Deaver and E. P. Cronkite. -p. 120.
Malaria and Its Control in Persian Corridor During 1943. L. A. Stearns and F. R. Ostrander. -p.125.

The Nagasaki Survivors in 1947.—Warren says that by presidential directive, under the National Research Council, an Atomic Casualty Commission is actively cooperating with the Japanese in a long range study of the surviving population of Hiroshima and Nagasaki. Since the explosions at Hiroshima and at Nagasaki were air bursts, relatively little of the fission products remained at the site. Instead, they were widely disseminated through the stratosphere. Consequently, every bit of bombed area is safe for habitation and for cultivation. The scars of flash burns are relatively frequent among the survivors. Special attention is being given to keloid formation in these scars. The incidence of the keloids appears to be somewhat greater among Japanese than whites, but there is no evidence that there is any specific relationship between the occurrence of keloid in scar tissue and exposure to the explosion of an atomic bomb. In 1945 a considerable number of the survivors manifested disturbances of the hemopoietic tissue, as evidenced both by peripheral blood counts and by sternal marrow biopsies. In 1947 most of the survivors had returned approximately to normal. Three cases of leukemia, 1 probable case of leukemia and 1 of multiple myeloma have been reported as occurring among the group of survivors up to the present time. In examining sternal marrow aspirations in a few of the survivors, an abnormal prevalence of monocytes and reticular cells suggests in some that the marrow may not be entirely normal. No tumors of gonads have been reported among the survivors. Only slight changes in dominant genes can be expected, so it will probably be at least twenty-five years before reliable data on this vital point are obtained.

New England Journal of Medicine, Boston
238:171-204 (Feb. 5) 1948

Medulloblastoma Cerebelli: Diagnosis, Treatment and Survivals, with Report of 56 Cases. F. D. Ingraham, O. T. Bailey and W. F. Barker. -p. 171.
Practical Importance of Modern Concepts of Psychosomatic Relations. A. O. Ludwig. -p. 175.
*Cytologic Method in Diagnosis of Cancer. M. Fremont-Smith, Ruth M. Graham and J. V. Meigs. -p. 179.
Recent Therapuetic Trends in Allergy. W. S. Burrage. -p. 181.
*Septicemia Due to Proteus Vulgaris: Review of Literature and Report of Case Cured by Streptomycin. H. L. Abrams. -p. 185.
Epidemiology of Tularemia in Massachusetts with Review of Literature. J. C. Ayres and R. F. Feemster. -p. 187.
Twisted Cyst of Serosa of Cecum. -p. 194.
Lymphatic Leukemia. Leukemic Infiltration of Bone Marrow, Spleen, Lymph Nodes, Liver, Kidneys, Lungs, Testicles, Pericardium, Pleura and Voluntary Muscle. -p. 196.

Cytologic Method in Diagnosis of Cancer.—Fremont-Smith and associates point out that for many years pleural and ascitic fluids have been examined for malignant cells, their presence depending on the same property of desquamation. The method was first made applicable to other than metastatic tumors by Papanicolaou, who in 1928 recognized cancer cells in the vaginal secretion of women with cancer of the uterus. The value of the method for the diagnosis of uterine carcinoma has been established. In the detection of early cervical neoplasms it is apparently more accurate than routine biopsy. Studies are in progress to determine the efficacy of cytologic examination in the diagnosis of cancer of the stomach, lung and urinary tract. In the early diagnosis of gastric carcinoma the new method may prove to be of great value.

Septicemia Due to Proteus Vulgaris.—Reviewing the data on 52 cases of septicemia due to Proteus vulgaris that have been reported in the literature, Abrams says that these cases fell into two main groups: those associated with disease of the genitourinary tract, and those associated with infection of the ear, nose and throat. Until the advent of streptomycin the prognosis in these cases was poor. The author reports a patient who was cured by streptomycin and suggests that a striking reduction in mortality may be expected.

Oklahoma State Medical Assn. Jour., Oklahoma City
41:1-40 (Jan.) 1948

Surgical Treatment of Peptic Ulcer with Preliminary Report on Vagotomy. L. J. Starry and E. B. Neff.-p. 4.
Danger of Lubricating Jellies in Surgical Procedures. C. E. White. -p. 7.
Radiologic Diagnosis of Acute Surgical Abdomen. S. Pollack. -p. 8.
Endometriosis. H. G. Bennett Jr. -p. 11.
Some Modern Concepts of Intestinal Function. W. T. Bynum. -p. 14.

41:41-78 (Feb.) 1948

Where Does This Road Lead? R. H. Lindsey. -p. 43.
Quantitative Serologic Tests in Evaluation of Syphilotherapy. F. R. Hassler and Catherine Harris. -p. 45.
Common Errors in Diagnosis of Syphilis. H. A. Foerster. -p. 48.
Cholecystitis and Cholelithiasis. B. Halpert. -p. 50.
Review of Management of Syphilis. C. P. Bondurant. -p. 52.

Radiology, Syracuse, N. Y.
50:1-146 (Jan.) 1948

Introduction to Symposium on Treatment and Care of Advanced Cancer Patients. H.H. Murphy.—p. 1.
Care of Patients with Advanced Pelvic Cancer. W.E. Costolow.—p. 3.
Management of Advanced Cancer of Breast. A.W. Erskine.—p. 7.
Palliative Procedures in Advanced Cancer of Mouth. G. Beckstrand.—p. 10.
*Pulmonary Disease in Workers Exposed to Beryllium Compounds: Its Roentgen Characteristics. L.M. Pascucci.—p. 23.
The Adult Silent Chest. G.M. Landau and Hildegarde A. Schorsch.—p. 37.
*Radiologic Differentiation Between Pericardial Effusion and Cardiac Dilatation. J. Arendt.—p. 44.
Roentgen Treatment of Subacute Sinusitis in Children. D.R. Laing.—p. 52.
Hilar Densities Simulating Neoplasms. C. Gottlieb and H.S. Sharlin.—p. 57.
Roentgenologic Aspect of Certain Lesions of Bone: Neurotrophic or Infectious? J.R. Hodgson, D.G. Pugh and H.H. Young.—p. 65.
Calcium, Phosphorus and Phosphatase as Aids in Diagnosis of Bone Lesions. E.B. Flink.—p. 72.
Experiences with Nasopharyngeal Carcinoma. V.P. Graham and R.R. Meyer.—p. 83.
Diverticulitis with Abscess Formation and Vaginal Fistula. R.H. Marshak.—p. 92.

Pulmonary Disease in Workers Exposed to Beryllium Compounds.—Pascucci presents a brief summary of the clinical data accompanying the chest films of 32 patients who were exposed to dust of beryllium compounds and in whom delayed pulmonary changes developed. Pathologic changes observed at necropsy in several cases are briefly described. Histories of 4 patients are presented. Roentgenograms of the lungs are characterized by a bilateral, uniformly widespread, diffusely granular and/or nodular infiltration. No other disease entity is known to produce this fine disseminated granular type of infiltration. In both types, but more so in the granular, there may develop coalescent or confluent shadows. The period of observation is not yet adequate to warrant a valid correlation between the clinical course and the pulmonary changes, nor is the final result known in those patients with clinical remission but persistent pulmonary lesions. Prognosis should be guarded in patients with the granular type of nodulation, especially when confluent shadows are superimposed. Roentgenographic pulmonary changes may exist without significant symptomatology. Many of the patients were at first suspected of having Boeck's sarcoid. A diagnosis of silicosis was almost as frequently entertained.

Differentiation Between Pericardial Effusion and Cardiac Dilatation.—Arendt shows that differentiation between cardiac dilatation and pericardial effusion is not easy, especially as the two conditions may occur simultaneously and sometimes from the same cause. Valsalva and Mueller tests are used in the roentgen differentiation. The dilated heart shows greater changes in size and shape than the heart enclosed in pericardial effusion or even the normal heart. At the change over from the Valsalva to the Mueller test the weak pulsations of the dilated heart increase and become visible. In the presence of pericardial effusion such pulsatory changes do not occur in equal measure. Observation of the angle of the bronchial bifurcation is also suggested as a diagnostic aid. Its visibility is frequently obscured in pericardial effusion. Visibility and widening to 100 to 130 degrees favor a diagnosis of auricular enlargement or hilus tumor. Absence of lateral and posterior displacement of the esophagus or a rather shallow, wide-curved pressure zone along the whole length of the lower esophagus is in favor of pericardial effusion. Lateral and posterior displacement and localized auricular impression are in favor of cardiac enlargement. Diminution or absence of cardiac pulsation is an important diagnostic sign of pericardial effusion, demonstrable by kymographic examination. Rapid change of the heart size at repeat examination is in favor of pericardial effusion but is not a reliable sign. There is no configuration of the heart entirely pathognomonic of the pericardial accumulation of fluid.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 1-34 (Jan. 3) 1948

*Penicillin in Subacute Bacterial Endocarditis: Report to Medical Research Council on 269 Patients Treated in 14 Centres Appointed by Penicillin Clinical Trials Committee. R. V. Christie. -p. 1.
Intravenous Alimentation. H. E. Magee. -p. 4.
*Harer Manifestations of Herpes Zoster: Report on 3 Cases. T. Parkinson. -p. 8.
Treatment of Chronic Ulceration After Irradiation of Plantar Wart. M. H. Shaw. -p. 11.
Exertion Hemoglobinuria: Report of Case. E. J. L. Lowbury and A. P. L. Blakely. -p. 12.
*"Tridione" in Treatment of Petit Mal. A. J. M. Butter. -p. 13.

Penicillin in Subacute Bacterial Endocarditis.—Christie reviews observations on 269 patients with subacute bacterial endocarditis who were treated with penicillin at 14 different centers appointed by the Medical Research Council in Great Britain. When the investigation was first begun, penicillin was still scarce and the dosage was inadequate. Subsequently treatment was continued for longer periods and larger daily doses were given. Administration of 500,000 units of penicillin a day for twenty-eight days can be expected to control the infection in about 90 per cent of patients with subacute bacterial endocarditis, but about 35 per cent of these die of heart failure and other complications. Larger doses should be given for a longer period of time to patients who relapse and to patients in whom the infecting organism is more than eight times as resistant as the Oxford staphylococcus. Of the relapses, 90 per cent occurred within a month of treatment, but danger of relapse persists after a year or more of good health. Evidence of heart failure or of poor nutrition is of great importance in prognosis. The duration of infection and the nature of the primary cardiac lesion are also of some significance. What appear to be viable organisms are occasionally found in the cardiac valves of those who have died after the infection has apparently been controled.

Rare Forms of Herpes Zoster.—Parkinson reports 3 cases of herpes zoster with unusual motor and cutaneous manifestations. In the first patient the zoster was accompanied by paralysis in the distribution of the fifth cervical segment. The second patient had ophthalmic zoster with generalized eruption, followed by weakness of the levator palpebrae. In the third patient the zoster was of trigeminal and cervical distribution accompanied by generalized eruption and followed by facial palsy. It is suggested that zoster virus produces a pleomorphic group of diseases with varying degrees of cutaneous and nervous symptoms. In the classic form the brunt of the infection is borne by the sensory ganglions, the resulting symptoms being pain and a cutaneous eruption in the peripheral distribution of the fibers proceeding from the affected ganglions. Study of the rarer manifestations of the disease shows that in some cases in which motor symptoms occur there is clinical and pathologic evidence that the anterior horn cells of the spinal cord are affected in a manner similar to that in poliomyelitis. In others the infection produces an exanthem clinically identical with that of varicella. From the available evidence it seems no more reasonable to deduce that varicella and zoster are caused by the same virus than it would be to make a similar deduction regarding zoster and poliomyelitis. It seems much more probable that the virus is capable of producing a range of clinical manifestations varying from simple motor lesions to generalized cutaneous lesions, and that the classic form of the disease lies midway between these extremes.

"Tridione" for Petit Mal.—Butter points out that the synthetic anticonvulsant drug "tridione," 3,5,5-trimethyloxazolidine-2,4-dione, has been extensively used in the treatment of petit mal in America since 1944. When supplies of this drug became available in Britain, a preliminary investigation was made at a hospital for epilepsy. The treatment with "tridione" in 23 cases of petit mal is analyzed. Approximately four fifths of the patients improved, but various toxic symptoms and signs were manifested in almost every case. Nineteen patients mentioned that they found the outdoor light too bright. This phenomenon was variously described as "dazzle" or "glare," or "a whiteness like mist over everything." In most instances the sensation ceased after a short interval. Five men were aware of slight drowsiness, apparently due to the drug; 1 complained of lack of concentration and 1 of restlessness; in 2 slight ataxia developed; 2 complained of hiccup and 2 of slight epigastric discomfort. In 1 there developed a slight rash, and 1 had a severe rash of the face, neck and hands. Most of the patients were anxious to continue taking the drug, as in their opinion the relief obtained from the reduction in their attacks more than outweighed the slight nuisance of the "dazzle phenomenon" or the other symptoms. The author believes that "tridione" has a pronounced inhibitory effect on petit mal.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

54:729-904 (Dec.) 1947. Partial Index

Diagnostic and Therapeutic Aspects of Kymographic Uterotubal Insufflation with Comparative Observations on Hysterosalpingography. I.C. Rubin. -p. 733.
*Biology of Cervix and its Relation to Puerperal Infections. M.B. McIlrath and A.L. Hellestrand. -p. 746.
Range of Blood Pressure Among Women who had Normal Pregnancy and Confinement. W.J. Martin. -p. 778.
Value of Guterman Test in Threatened Abortion. S. Bender. -p. 783.
Investigation of Causes of Sterility and Lowered Fertility in West African Negroes. C. H. Morison. -p. 793.
Calcium and Phosphorus Metabolism in Pregnancy. E. Obermer. -p. 817.
Vestibular Anus. J.L. Wright. -p. 824.
Cramps in Pregnancy. Margaret Robinson. -p. 826.
Some Aspects of Fetal Pathology. G.G. Lennon. -p. 830.
Inevitable, Incomplete and Septic Abortion. G. FitzGibbon. -p. 838.
Incubation Period of Ophthalmia Neonatorum. A. Sorsby. -p. 842.
*Basal Temperature in Sterile Women. I. Halbrecht. -p. 848.
Case of Spontaneous Extra- and Intra-Peritoneal Rupture of Hydronephrosis in Pregnancy. I.C. Campbell. -p. 853.
Use of Hodge Pessary for Correcting Backward Displacement of Uterus. T. N. A. Jeffcoate. -p. 855.
Pyrexia as Sign of Endometriosis. T.N.A. Jeffcoate. -p. 858.
Plastic Surgical Treatment of Congenital Transverse Diaphragms of Vagina. M. Tritoftides. -p. 861.

Biology of Cervix and Puerperal Infections.—McIlrath and Hellestrand review the history and the present knowledge of puerperal infection. Their own investigation was undertaken in an endeavor to discover if cervical lesions present during pregnancy were caused by or harbored organisms which could spread into the tissues during labor and the puerperium and be responsible for the low grade infections so frequently seen

in women who have borne children. Seventy-seven women were studied throughout pregnancy, in the puerperium and post partum. Of these, 12 were normal, 7 were referred as normal but classified as "for observation," 37 were primigravidas and 21 multiparas with leukorrhea. The pH data, cells seen in smears from cervix, vagina and urethra and cultures taken from these areas were studied. Biopsies were taken at intervals throughout pregnancy, the puerperium and post partum. From a study of these, normal changes in the cervix were recognized and four deviations from normal were classified. They are hyperplastic, proliferative, secretory and mixed types. In only 2 patients in the normal group did inflammatory lesions develop, and both these patients had suffered traumatic lesions. In the hyperplastic group 2 patients who entered labor with active erosions later had inflammatory lesions, although they suffered no trauma. In nearly half of the abnormal primigravidas (15) inflammatory lesions developed, though traumatic lesions had been suffered by only 2 of these patients. In about two thirds (14) of the abnormal multiparous group inflammatory lesions developed, and 8 of these patients had suffered trauma. Of the 23 patients who had no pelvic abnormality at their final visit, all had clinically healthy cervices or minor deviations from normal at the last prenatal visit. The authors conclude that the cervical lesions constitute a definite danger to the mother and increase chances of the development of a low grade pelvic infection after confinement. Every patient should have her cervix inspected at each antenatal visit just as faithfully as her blood pressure is taken. The treatment which proved most satisfactory was the application of penicillin-sulfanilamide powder and vitamin B therapy. Every patient should be followed up for at least eight weeks post partum, as spreading lesions may not appear before that period. If a woman with a cervical erosion is seen before marriage, everything possible should be done to cure the condition in view of the risk that a low grade pelvic inflammation may develop after a pregnancy.

Basal Temperature in Sterile Women.—Halbrecht says that investigators are of the opinion that the two most important causes of female sterility are tubal occlusion and failure of ovulation in women who menstruate normally. Although the diagnosis of tubal occlusion is now easy, the investigation of ovarian activity still offers difficulties. Among methods used for this purpose, endometrial biopsy has been considered the most reliable, but variations of the basal temperature curve also seem significant. The author reviews studies on 425 sterile women, who measured their temperatures in 1,184 cycles. In 80 per cent the the oral basal temperatures varied between 36.4 and 36.8 C. (97.5 and 98.2 F.) in the postmenstrual phase and between 36.9 and 37.2 C. (98.4 and 99 F.) in the premenstrual phase of the cycle. In 90 cases it was possible to compare the basal temperatures with endometrial biopsies taken during the same cycle. In all but 3 cases the results were identical. It seems that the basal temperature is more reliable than the edometrial biopsy, at least for the purpose of determining the time of ovulation. The temperature curves in normally menstruating sterile women were biphasic. The two hundred and twenty two cycles in which the temperature curve was monophasic must be considered as anovulatory. In many women ovulation seems to effect no more than a drop of 0.1 to 0.3 degree Centigrade (0.18 to 0.54 Fahrenheit) during one to three days of the intermenstrual midcycle. Thyroid extract, progestin and estrogens do not change the temperature level. The rise in temperature in the second half of the cycle is caused by a complex mechanism, lutein being probably only one of the many factors. Amenorrheic women have monophasic curves. In many cases, however, the temperature rises fourteen days before spontaneous menstruation, indicating that ovulation has occurred.

Medical Journal of Australia, Sydney

2:737-764 (Dec. 20) 1947

Concerning Pathology and Treatment of Tennis Elbow. J.R.S. Lahr. -p. 737.
*Treatment of Congenital Club Foot. G.K. Smith. -p. 742.
Anterior and Posterior Marginal Fractures of Tibia. H.M. Hill. -p. 744.
Taussig-Blalock Operation for Pulmonary Atresia. K. Maddox. -p. 746.
Paraldehyde and Barbiturate Analgesia in Labor. R. Mackey. -p. 748.

2:765-792 (Dec. 27) 1947. Partial Index

Modern Trends in British Psychiatry. A. Stoller. -p. 765.
Psychosomatic Medicine. A.T. Edwards. -p. 772.
Vitamin C in Prevention of Colds. N.W. Markwell. -p. 777.
Modified Drinker Respirator for Newborn Infants: Preliminary Report. F.E. Hytten. -p. 779.

Club Foot.—Reviewing the various treatments for club foot, Smith is of the opinion that the Denis Browne splint, either in its original form or in its modifications, remains the most satisfactory appliance in the treatment of club foot. The author's preference is for the modification of Bell and Grice, which for him has solved the problem of keeping the heel in contact with the sole plate. There is no need to use great force in manipulating the infant's foot, the majority of club feet in the newborn being amenable to overcorrection by gentle stretching in four to six weeks at the outside. It is at this stage that the Denis Browne splint can be introduced with such telling effect and the overcorrection continuously maintained until walking commences. Inversion of an undeveloped heel is the main element in relapsed or neglected club feet. When the child is 5 or 6 years of age this deformity cannot be corrected by manipulation. In these tarsectomy is usually planned about five years later, the accepted age for stabilizing operations. The author has operated on 30 patients of this age. He has removed a wedge from the neck of the talus and taken a cut from the calcaneocuboid joint. In 25 of these cases the purpose of the operation was achieved, that is, a plantigrade foot. This is only a makeshift operation, as it does not effect the most important element in the deformity or help the equinus position. However, it does produce a foot much improved in appearance, with a more normal weight distribution. For the treatment of older patients the author prefers an osseous reconstruction in the form of a wedge tarsectomy.

Proceedings of Royal Society of Medicine, London

40:849-932 (Dec.) 1947. Partial Index

Certain Anatomic and Physiologic Considerations in Paralysis of Larynx. V. E. Negus. -p. 849.
Treatment of Subacute Maxillary Sinusitis Especially in Children. G. E. Archer. -p. 854.
Normal Temporal Horn and Its Deformities by Tumors in in Middle Cerebral Fossa. E. Lindgren. -p. 859.
Importance of Statistics in Psychiatry. L. S. Penrose. -p. 863.
Associated Carcinoma of Colon and Rectum: Report of 2 Cases. F. Forty. -p. 872.

Cardiologia, Basel

12:133-194 (No. 3) 1947

*Atypical, Verrucous Endocarditis of Libman-Sacks Type and Its Relationship to Acute Lupus Erythematosus. A. von Albertini and O. Alb. -p. 133.
*Libman-Sacks Disease. E. Coelho and A. Gonçalves. -p. 170.
*Allergic Myocarditis Following Use of Antirabic Vaccine. E. Lyon. -p. 183.

Atypical Verrucous Endocarditis.—Von Albertini and Alb report 1 case of atypical verrucous endocarditis of the Libman-Sacks type with acute disseminated lupus erythematosus in a woman aged 24. Two sisters of the patient had a chronic form of the disease. The patient presented the clinical picture of a generalized infectious condition with acute exacerbations initiated by chorea minor and associated with high fever, disturbance of circulation, polyarthritic and nephritic nanifestations and panmyelopathy. The dissemination extended to the mucous membranes of the oral cavity, the urinary bladder and the vulva. Death occurred from bronchopneumonia, and the anatomicopathologic picture revealed a characteristic form of atypical verrucous endocarditis complicated by bland embolism of an intermediate form between rheumatic endocarditis and endocarditis lenta. In addition there were inflammatory changes in the arteries in the sense of periarteritis nodosa which suggested an acquired allergic reaction. From the pathogenic point of view the clinical and bacteriologic peculiarities of the Libman-Sack syndrome may be explained best on the basis of a focal infection (suppurative bronchiectasis in the author's case). The acute form of lupus erythematosus is probably a modification of a preexistent chronic lupus erythematosus, and the diffusion of the cutaneous disease may occur under the influence of the Libman-Sacks disease. Spread of this type also occurs as a sequela of other severe diseases such as tuberculosis or cancer.

Libman-Sacks Disease.—Coelho and Goncalves report 2 cases of Libman-Sacks disease in 2 women aged 22 and 18, respectively, who died. The first patient had an acute disseminated lupus erythematosus and presented a mitral systolic murmur on auscultation; necropsy was not performed. The second patient also had an acute disseminated lupus erythematosus without any symptom of endocarditis on auscultation. Necropsy in this case confirmed the observations of atypical verrucous endocarditis by Libman, Sacks, Gross and other American authors. There were no vascular changes of the renal glomruli. Because of the presence of mural endocardiac lesions, clinical symptoms of the verrucous endocarditis may be absent. On the basis of the morphologic changes and the clinical symptomatology it is considered that acute lupus erythematosus and Libman-Sacks disease constitute the same disease, which may or may not involve the skin but which always affects the viscera (with or without mural or valvular endocarditis).

Allergic Myocarditis.—Lyon reports 1 case of allergic myocarditis in a man aged 58 who had been bitten by a dog and had been given fourteen antirabic vaccine injections. The vaccine used was a 2 per cent emulsion of fixed virus brain destroyed by the combined action over twenty-four hours of heat and 1 per cent phenol. After each injection, redness, swelling and itching was noted at the site, increasing in intensity with each injection. A few weeks after this treatment had been terminated he began to suffer from frequent attacks of palpitation during working hours. During subsequent months palpitations increased, particularly after mounting stairs and after some walking. The patient then had dyspnea and was susceptible to quick fatigue. Electrocardiograms showed that both the atrioventricular and intraventricular conduction time were at the upper limit of normal or had slightly surpassed this limit, to become normal again in the course of time. Both atrioventricular and ventricular extrasystoles occurred occasionally. There were T wave changes in CF2, a high T in the first and a flatly negative T in the second record, while T was again normal in the fifth record. In elderly persons with an allergic history the employment of skin tests is indicated to determine the hypersensitivity to antirabic vaccine before initiation of the treatment. The occurrence of allergic myocarditis in the author's case suggests that myocarditis often may not be the result of infection and that the way in which the organism and the heart muscle react may play a decisive part in the pathologic mechanism.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

91:3665-3740 (Dec. 20) 1947

*Auricular Fibrillation During Pregnancy and Puerperium. G. A. Lindeboom. -p. 3686.
*Open Dislocation of Four Fingers in Metacarpal Joints. B. A. G. Veraart. -p. 3695.

Auricular Fibrillation in Pregnancy.—Lindeboom presents histories of 7 women with mitral stenosis, in whom auricular fibrillation developed during pregnancy or puerperium. Review of the literature suggests that fibrillation develops infrequently in young pregnant women with mitral stenosis. In the group of 7 all but 1 were over 30 years of age. All the patients had signs of decompensation. If the patient survived, the decompensation subsided under suitable treatment. The mortality rate is considerable; one statistical report indicates that 33 of 99 cases terminated in death. Little is known about the later fate of women who were discharged from the hospital. Efforts should be made to prevent decompensation. Hospitalization is advisable in order to enforce rest in bed; digitalization should be employed, and after the signs of decompensation have subsided efforts can be made to restore the normal rhythm by quinidine. The author does not regard cesarian section advisable for these women.

Dislocation of Fingers in Phalangometacarpal Joints.—Veraart reports the case of a coal miner in whom 4 fingers of the left hand were dislocated dorsally, with the result that the heads of the metacarpal bones were denuded and exposed through the wounds. The flexor tendon sheaths were all ruptured. After the wound was cleansed with hydrogen peroxide and diluted alcohol, it was disinfected with 5 per cent tincture of iodine. Healing took place by primary intention after reposition and suture. After six weeks the patient was able to resume light work. Flexing of the fingers was so slightly impaired that at the end of six months the patient received compensation on the basis of a 20 per cent disability.

Progrès Médical, Paris

76:1-32 (Jan. 10) 1948

*Painful Syndrome of Upper Extremity: Shoulder Pain and Brachialgia. R. Leriche. -p. 9.

Shoulder Pain and Brachialgia.—According to Leriche, cold, epidemic neuraxitis, subdeltoid calcification, a glomus or a cervical rib may be the causes of brachialgia which will be identified easily. In the absence of one of these causes two others may be considered, namely, herniation of intervertebral disk or abnormality of the thoracic outlet. Frequently the symptoms of herniated disk, such as stabbing pain or pinprick

pain, heaviness, dead fingers, tingling and dysesthesia may be manifested only approximatively in the area of the affected root. There may be radiating pain in the nape of the neck, in both shoulders and in the breast. The motor phenomena, hypotonia, fibrillary contractions and disturbances of reflectibility may be more closely localized. There seem to be few vasomotor disturbances associated with herniation of the disk. Attacks resembling Reynaud's syndrome may be absent, although they are common in the scalenic syndrome and in cases of cervical rib or abnormal first rib. In herniation of the disk the contact is purely radicular. In the syndromes of the subclavian cavity and of the outlet of the thorax there is contact with the subclavian, as demonstrated by the high incidence of arterial dilatation or of distant thromboses. In the latter syndromes there may be occasional cramps. In any type of brachialgia the symptoms may be bilateral. Nocturnal predominance of the pain is characteristic of the syndrome which originates in the subclavicular cavity. Compression of the vein in the costoclavicular interval may be one of the causes. Symptomatology frequently may thus be an aid to the clinical diagnosis of brachialgia, while roentgenography will establish the diagnosis: when the transverse process of the seventh cervical vertebra appears like the beak of a toucan or thinned, one should consider a stellate syndrome; on the contrary, when an obliterated intervertebral space may be seen in the upright column, and the closure of an intertransverse aperture in the oblique, one should consider herniation of the disk. Repeated infiltrations of the stellate ganglion or section of the scalenus should be carried out in the first case and laminectomy in the second. Section of the scalenus should not be done without additional exploration of the superior aperture of the thorax, and in certain cases it should be combined with excision of part or all of the first rib.

Revista Medica Brasileira, Rio de Janeiro

23:401-450 (Nov.) 1947 **Partial Index**

*Penicillin in Therapy of Hepatobiliary Infection: New Method for Duodenal Application. W. Martini. -p. 433.

Penicillin in Hepatobiliary Infection.—Treatment of hepatobiliary infection consists in emptying the stomach of gastric secretion; biliary drainage with isotonic sodium chloride solution, repeated several times at intervals of thirty minutes; washing the duodenum by instillation of 15 cc. of isotonic sodium chloride solution through an Einhorn sound; and, immediately after washing, intraduodenal administration of a solution of 30,000 Oxford units of penicillin in 15 cc. isotonic sodium chloride solution. The patient remains in right lateral posture for from five to ten minutes, after which the sound is removed and intramuscular injections of 20,000 Oxford units of penicillin are given at intervals of three hours to a total dose which varies between 800,000 and 1,000,000 units. Treatments are repeated at intervals of one month. The number of treatments varies between two and six, depending on the seriousness of the infection and the clinical reaction to treatment. Permanent clinical cure is reported in 35 cases.

Schweizerische medizinische Wochenschrift, Basel

78:1-24 (Jan. 10) 1948. **Partial Index**

*Q Fever (Queensland Fever) in Switzerland: Endemic Pneumonias Caused by Rickettsia Burneti. O. Gsell. -p. 1.

Recent Contributions to Physiology of Secretion of Epinephrine. H. Hermann. -p. 10.

*Roentgen Therapy of Localized Hyperhidrosis: Follow-Up of 192 Patients. G. Miescher and C. Böhm. -p. 14.

*Nicotinamide in Pregnancy Toxicoses, Particularly Hyperemesis. W. Widmer. -p. 20.

Q Fever in Switzerland.—Gsell says that of the cases of atypical pneumonia observed at the Medical Clinic of St. Gallen in Switzerland in the spring of 1947, 7 gave positive complement fixation tests with the antigen of Q fever. Further investigations revealed that at least four groups of infections due to Q fever occurred in Switzerland during 1947. The first group was a familial one, in which 4 persons became ill within three days. The second group involved a village epidemic, in which about 50 cases of pneumonia, chiefly in men, occurred in four weeks. The rickettsial character of the disease was serologically demonstrated in 1 case at once and in 6 others in the course of the next six months. The third group comprised sporadic cases that occurred in the spring of 1947 in St. Gallen and in the autumn in eastern Switzerland. The fourth group was an epidemic of 30 cases occurring in a boarding school in Geneva. Sudden high fever, lack of appetite and malaise, occasionally with vomiting and sweating, severe headache and sometimes stupor were the usual symptoms. Roentgenograms of the chest usually revealed extensive infiltrations in the form of soft multiple shadows. In the severe cases physical signs of pneumonia became evident later on. The process usually had a favorable outcome with subsidence of the fever between the fifth and twelfth days. Complications took the form of serious pleurisy, orchitis or thrombophlebitis. Serums showed positive complement fixation titers for Rickettsia burneti, and injection of blood into guinea pigs resulted in the appearance of specific antibodies of Rickettsia burneti.

Roentgen Therapy of Hyperhidrosis.—In order to obtain information about indications for roentgen treatment of localized hyperhidrosis Miescher and Böhm investigated cases involving such treatment from as far back as 1925, when the iontometric system of measurement came into use. Treatments were given after four, six and eight weeks. At the first and second irradiations 400 r were usually given and at the later ones 300 r. Only patients with the localized form of hyperhidrosis of hands, feet or axillas were treated with roentgen rays. A total of 192 patients were studied, and it was found that there is a considerable difference in the efficacy of roentgen therapy, depending on whether the hyperhidrosis is continuous or intermittent. Whereas the results of roentgen therapy were favorable in more than four fifths of those with the continuous form, less than one third of those with the intermittent form responded favorably. Although considerable dryness of the hands resulted in some cases, no roentgenologic injuries of the skin resulted.

Nicotinamide in Toxicoses of Pregnancy.--Widmer says that he obtained excellent results with nicotinamide in patients with various gestational disturbances such as those of the appetite, and in nausea, emesis and hyperemesis. At the first injection 1 ampule of 100 mg. of nicotinamide is usually administered. If this injection has no effect, the author usually suggests to the patient that she try from four to six injections over a number of days. If the first injection effects some improvement, a total of three or four injections is usually adequate. Of 68 women with various forms of gestoses, particularly hyperemesis, 38 were cured, 18 more were improved and the remaining 12 remained uninfluenced.

Book Notices

Directory of Convalescent Homes in the United States. Prepared under the Auspices of the Committee on Public Health Relations of the New York Academy of Medicine. Sixth edition Paper. Price, 50 cents. Pp. 112. The Burke Foundation. White Plains, New York, 1947.

The Committee on Public Health Relations of the New York Academy of Medicine presents in this booklet a list of one hundred and sixty-four institutions in thirty states devoted to convalescent care, tuberculosis preventorium service and the hospitalization and treatment of cardiac disease, particularly in children. The majority of the homes are philanthropic institutions offering free care or service below cost. Proprietory institutions are also represented, but only when charges are low enough to enable patients to obtain accommodations for ward or semiprivate care. Homes offering service primarily for the aged are not included.

The committee recognizes that without inspection facilities it is not possible to evaluate the quality of service rendered, and therefore the directory listing does not in any way constitute an endorsement or approval of individual institutions. Though the list is not a complete record of the convalescent homes in all states, it nevertheless becomes a useful source of reference for physicians, hospital administrators, social service workers, welfare agencies and individual patients and their families. In relation to each institution the directory gives information about location, buildings, bed capacity, ownership or control, administrative personnel, medical staff, nursing service, types of patients admitted, requirements for admission, therapeutic facilities available and rates. Of the institutions listed, seventy-three are for adults only, seventy-six limit their admissions to children and fifteen offer facilities for both adults and children.

Medicine Today: The March of Medicine 1946. No. XI of the New York Academy of Medicine Lectures to the Laity. Cloth. Price, $2. Pp. 177. Columbia University Press, 2960 Broadway, New York 27, 1947.

The lectures in this volume were designed for the public. There are seven lectures in this series. They offer a realistic appraisal of the relation of present day medicine to the larger society in which we all live. The moral standards of the community require that the ill be cared for regardless of ability to pay. Medicine is emerging as a social science as well as a natural science. The form of medical practice must not be allowed to interfere with the quality of medical care received. More particularly, compensations and incentives must not be allowed to become other than spurs to better work. The series as a whole comprises a healthy introspective glance into the medical profession.

Best's Safety Directory of Safety, Hygiene, First Aid and Fire Protective Products. Edited by Harry Armand and others. Second annual edition, 1948. Fabrikoid. Price, $5. Pp. 494, with illustrations. Safety Engineering Magazine, a Division of Alfred M. Best Co., Inc., 75 Fulton St., New York 7, 1947.

This Directory, as recently announced by the Alfred M. Best Company's Safety Engineering Division, is unique in that it combines all the best practical features of a safety manual, directory, index, encyclopedia and catalogue into one comprehensive, profusely illustrated volume. It is the "what, how and where book of safety;" it shows what safety products or devices to use for specific hazards, how to use them and where to get them. Best's was the first safety directory published and is still the only one in the field. One outstanding feature of this book is its indexing and subject-grouping system. These devices—plus countless illustrations—make it easy to locate safety products even when the user is not certain of the type or name of the product he needs. The logical arrangement of subjects also serves as a checklist of hazards—many of which are frequently overlooked. This second annual edition will be appreciated by industrial physicians and surgeons, industrial hygienists, public health and safety officials.

Los Angeles County Hospital House Staff Manual. Robert F. Nielsen, M. D., Editor in Chief. John A. Wilson Jr., M. D.; Gordon E. Goodhart, M. D. and Herman Weiner, M. D., Assistant Editors. Fifth edition. Loose-Leaf. Paper. Price, $4. Pp. 525, with illustrations. Los Angeles County Hospital, 1200 N. State St., Los Angeles 33, 1947.

This manual is a comprehensive loose-leaf record of the therapeutic procedures that have been outlined by the Los Angeles County Hospital for the guidance of the interns and residents on the staff. There are detailed sections on respiratory and circulatory diseases; hematology; renal, digestive, hepatic and biliary diseases; endocrine and metabolic disorders; nutritional and deficiency changes; allergy; arthritis, and contagious diseases. Procedures commonly employed in dermatology, syphilology, pediatrics, psychiatry, neurology and obstetrics-gynecology are also described as well as those pertaining to general surgery, orthopedics, urology, ophthalmology and otolaryngology. Descriptive material is likewise included, with reference to minor therapeutic procedures, sulfonamide drugs, penicillin and streptomycin therapy, physical medicine, roentgen ray and laboratory procedures, dietary management, prescriptions and special drugs. Conversion tables for equivalent weights and measures are provided to facilitate the use of the metric system which has been instituted in the present edition in accordance with modern trends.

The manual is a valuable guide to interns and residents in their introduction to individual hospital services. It can also serve as a useful reference for other institutions planning to formulate new procedures or modify existing regulations.

A Synopsis of Anaesthesia. By J. Alfred Lee, M.R.C.S, L.R.C.P., M.M.S.A., Consultant Anaesthetist to Southend General Hospital, Rochford, England. Cloth. Price, $4. Pp. 254, with 42 illustrations, Williams & Wilking Co., Mt. Royal and Guilford Aves., Baltimore 2, 1947.

This little book is well written and contains more information in fewer words than any other book on anesthesia. It covers material on the following subjects: history of anesthesia, respiration, preanesthetic care and preparation, premedication, inhalation anesthesia, agents for inhalation anesthesia, the closed circut, cyclopropane, controlled respiration, nitrous oxide anesthesia, accidents of inhalation anesthesia and how to treat them, gases used in association with anesthesia, endotracheal anesthesia, rectal anesthesia, basal narcosis, intravenous anesthesia, analeptics, spinal analgesia, regional anesthesia, refrigeration analgesia, choice of anesthetic as influenced by type of operation, choice of anesthetic and methods as influenced by general condition of the patient, the use of curare in anesthesia, shock, anesthesia in thoracic surgery, the complications and sequelae of anesthesia, explosion risks in anesthesia, management of the unconscious patient, anesthetic records and anesthesia and analgesia in labor.

Semiologia Cardiovascular. Por el Dr. Rafael Carral y de Teresa, medico del Instituto nacional de cardiologia de México, México, D.F. Cloth. Pp. 499, with 93 illustrations. Instituto nacional de cardiologia, México, D.F., 1947.

This book presents a summary of cardiovascular disease. It emanates from the National Institute of Cardiology of Mexico City. It is a good up-to-date survey of the field in which the author shows his familiarity with the literature. The book is divided into six parts. The first deals with the functional disturbances caused by cardiovascular disease, including dyspnea, cyanosis, pain and palpitation. The second part deals with abnormal hemodynamics such as are encountered in valvular disturbances and with an insufficient myocardium. A discussion is presented on elevation of venous pressure, edema, ascitis, circulation time, blood volume and arterial hypertension. The third part deals with the clinical examination of the heart. The fourth part deals with laboratory tests, such as determination of sedimentation time, serology tests and the examination of the blood. The fifth part deals with the roentgen examination of the heart. The sixth part deals with electrocardiography. This book should prove useful to the physician and medical student who can read Spanish.

Lehrbuch der Pharmakognosie für Hochschulen. Begründet Von George Karsten. Sixth edition, edited by Dr. Ulrich Weber, Apl. Professor, zur Zeit an der Universität Marburg Lahn. Boards. Pp. 428, with 585 illustrations. Gustav Fischer, Jena, Germany, 1946.

Although no effort is made to describe pharmacognosy in an introductory chapter, it immediately becomes obvious according to this textbook that pharmacognosy is the study of all vegetable drugs. Most of the emphasis has been placed on the botanical characterization of the drugs, especially their morphology and histology. The student using this textbook must be familiar with the fundamentals of descriptive botany. Though less attention is devoted to the constituents and uses of these drugs, nevertheless these data are brief and complete.

The drugs to be treated are arranged on a taxonomic and also on a morphologic basis. In the beginning the drugs are grouped under the thallophytes and pteridophytes. The spermatophytes are divided into a number of morphologic groupings such as rhizome and roots, tubers, woods, barks, herbs, leaves, flowers, fruits and seeds. Each of these groups is subdivided into monocotyledons and dicotyledons, and, finally, the drugs are listed and described under these respective classes. Other drugs without a definite morphology are grouped according to their method of preparation or the nature of their constituents. Information concerning each drug includes, with few exceptions, the origin, description of the whole drug, its histology, a detailed microscopic description, constituents, uses and history. The comments pertaining to the preparation of each drug are somewhat limited. Occasionally a paragraph is devoted to the cultivation of the drug plant. All of the numerous illustrations are exceptionally good line drawings exhibiting unusual care as to details, accuracy and labeling. Many of the figures are drawn in color to differentiate the various tissues and cells. Such impressive illustrations should serve as a valuable visual teaching aid.

The book contains an appendix which includes a list of drugs frequently used in homoeopathy in the foreign countries and a key which may be followed in the identification of powdered plant drugs. It also includes a list of the drugs under the various plant families which are arranged according to the Engler system, and a list of the drugs classified on the basis of their most important chemical constituent.

Apparently the scope of pharmacognosy in Germany is somewhat narrowed to the botanical study of drugs. It would be well if the next edition of this textbook included subjects closely related to the interest of pharmacognosy, such as the insecticides, herbicides and allergens. Since Germany is the source of many vegetable drugs for export, it would have been interesting to learn something about the factors which influence the commerce of drugs and more about the cultivation of drug plants.

If one were to make a thorough study of the botanical drugs in the laboratory with the aid of this textbook, he would become, without question, an expert in the identification of such drugs. The reviewer highly recommends to any technician in drug plant work and to all laboratories interested in the authenticity and identification of their drugs the use of this textbook as a valuable reference. The American teacher of pharmacognosy will do well to supplement his information by frequent reference to this book.

Studies in Biochemistry Dedicated to Professor Dr. Carl Neuberg, on the Occasion of His 70th Birthday, by Pupils, Friends, and Colleagues. Editor: Bruno Kisch, M.D. [Experimental Medicine and Surgery, Volume V, No. 2-3, 1947.] Cloth. Price, $10. Pp. 306, with portrait. Brooklyn Medical Press, Inc., P.O. Box 99, Station H., New York 25, 1947. 1947.

This book consists of a collection of nineteen papers prepared by former students of Carl Neuberg in honor of the 70th birthday of this noted biochemist. Dr. Bruno Kisch has edited the volume and prepared the introduction summarizing Dr. Neuberg's life and achievements.

The papers cover a wide range of subjects, among which might be mentioned a discussion on the immunity to Brucella abortus by Alberto Ascoli, loss of alkali as a cause of nephritic acidosis by A.P. Briggs, the toxicity of histidine by Gustav J. Martin and the determination of aspartic and glutamic acids by Irene S. Roberts.

It is difficult to see the usefulness of this volume other than as a gracious memento to an eminent scientist. In general, the quality of the papers is not high, and the subjects are of little general interest. The book is suitable only for workers in biochemistry and allied fields.

Causes of Blindness Among Recipients of Aid to the Blind. By Ralph G. Hurlin, Sadie Saffian and Carl E. Rice, M.D. Federal Security Agency, Social Security Administration, Bureau of Public Assistance. Paper. Price, 40 cents. Pp. 131. Supt. of Doc., Government Printing Office, Washington 25, D.C., 1947.

This report analyzes the causes of blindness of nearly 21,000 recipients of aid to the blind as taken from medical records in twenty states during 1940 and 1941. As a result of uniform procedures required as a condition of federal welfare grants, the Bureau of Public Assistance was able to collect comprehensive and comparable data on the causes of blindness of recipients in relation to their age, sex, race and age at onset of blindness. Standard definitions and classifications were followed by the states included in the study. The chief source of information was the physician's report of eye examinations required for each applicant for aid to the blind and containing a diagnosis of the eye condition, cause and nature of the defect, a report of remaining vision, prognosis and recommendation of treatment. Causes of blindness were classified according to site and type of pathologic condition

and etiology of defect. When these tables are related, they yield statistics on the percentage distribution of recipients by cause for each site and type of affection and, conversely, by site and type of affection for each cause. Separate tables analyze etiologic data by states, age, sex, race and age at onset of blindness.

Despite the volume of information collected by the study, conclusions drawn from the data cannot be extended to the blind population as a whole. The sample group is unrepresentative, including only the needy, and underweighting blind children and blind persons 65 years of age and over, who receive aid under other public assistance programs. Taking this latter factor into account, the Bureau has adjusted its data by comparing the age distribution of recipients with persons found blind by the National Health Survey. The cause data suggest that more medical care could conserve or improve the vision of many recipients of aid to the blind.

Jaundice: Its Pathogenesis and Differential Diagnosis. By Eli Rodin Movitt, M.D., Acting Chief of Medicine, Veterans Administration Hospital, Oakland, Calif. Cloth. Price, $6.50. Pp. 261. with 25 illustrations. Oxford University Press, 114 Fifth Ave., New York 11, 1947.

This book presents clearly the problems met in the diagnosis of diseases associated with jaundice. In the first part the anatomic and functional changes found in the presence of jaundice are discussed. It includes a broad discussion of the normal and pathologic physiology of the liver, with a description of the basis and technic of the function tests in used Although indications and contraindications of the individual tests are not clearly defined, a successful attempt is made to combine them with clinical methods into an unified diagnostic approach. This part also contains an analysis of what little we know of the pathogenesis of jaundice. The shortcomings of this first section are caused by our still erratic knowledge of the physiologic basis of the function tests and of their application to the differential diagnosis of jaundice. Moreover, since, as yet, the correlation between anatomic and clinical findings in the liver is rather vague, the pathogenesis of jaundice is a thankless problem. The second section presents a review of the different diseases in which jaundice occurs. It reveals thorough knowledge of the literature as well as careful clinical observation and acumen. As cannot be avoided, some chapters are dealt with more sketchily than others; for instance, little reference is made to jaundice in childhood. The main emphasis is placed on diagnosis, and therapeutic considerations are kept in the background. As a whole, the book is written in a fluent and pleasant style and the well arranged tables help for quick orientation. The illustrations are well chosen. It should be of great value to the general practitioner, internist and surgeon who treat patients with jaundice. The value as a reference book for the student of the problem of jaundice is greatly reduced by the relatively small number of literature references, the simplification in the presentation of the newer advances and the omission of arguments where the facts are as yet unestablished. However, the latter two disadvantages may make for easier reading

Manual of Medical Parasitology with Techniques for Laboratory Diagnosis and Notes on Related Animal Parasites. By C. Coursen Zeliff, M.S., Ph.D., Assistant Professor of Human Parasitology and Zoology, The Pennsylvania State College, State College, Pa. Paper. Pp. 159, with illustrations. Price, $3.75. The Author, State College. Pa. 1947.

This text has been prepared as a laboratory and reference guide for use by medical and nonmedical students taking an intensive course in parasitology. Numerous references are cited. and many well selected tables and illustrations have been reproduced from other publications. The latter in many instances have suffered from the photo-offset technic and lithographic reproduction which together with reduction in size render them difficult to interpret.

The biologic and morphologic material is well presented and the notes on parasites of animals are useful. Similarly the section on laboratory technics is a useful compilation. Unfortunately, the text is not free from misinformation; for example, the statements that Schistosoma mansoni is found in Central America and Loa loa in the West Indies. The brief reference to DDT (4,4'-dichlorodiphenyltrichloroethane) is inaccurate and inadequate. The volume is weakened by lack of competent medical editing.

The Industrial Environment and Its Control. By J. M. Dallavalle. Cloth. Price, $4.50. Pp. 225, with illustrations. Pitman Pub. Co., 2 W. 45th St., New York 19, 1948.

Facts regarding the industrial environment and control are presented in this book with an unusual clarity and logical development. Simplicity and precision characterize the discussion of critical details regarding exposures to excessive concentrations of dusts, fumes, mists, gases and vapors. There is an extensive discussion of exhaust ventilation as a means of control. In the words of the author: "As to the special emphasis on exhaust ventilation, I need only point out that practically all problems relating to atmospheric contaminants, and hence to industrial hygiene, are solved by ventilation methods." The book is divided into twelve chapters with an introduction by J. J. Bloomfield, senior sanitary engineer, U. S. Public Health Service, in which the scope of industrial hygiene is treated in a masterful way. The names of the chapter headings are as follows: Problems and Trends. Psychrometry. The Atmospheric Environment. Illumination and Radiant Energy. Noise, Vibration, and Fatigue. The Thermal Environment. Industrial Ventilation. Design of Local Exhaust Hoods. Design of Exhaust Systems. Measurement of Air Flow. Air Sanitation. Industrial Dust Collection.

In addition the book contains a well written preface, an appendix and index. Industrial hygiene engineers will welcome this volume and assign it a deserved niche in their libraries.

Die Diagnostik und Therapie des Nebennierenausfalls und das Krankheitsbild der relativen Nebennierenrindeninsuffizienz (Hypadrenie). Von A. Kappert [Erschienen in den Helvetica medica acta als Supplementum 20, Beilage zu Vol. 14, 1947, Fasc. 4/5] Paper. Price, 8 Swiss francs. Pp. 102, with illustrations. Grune & Stratton Inc., 381 4th Ave., New York 16; Benno Schwabe & Co. Klosterberg 27, Basel 10, 1947.

This small monograph is a competent review of the diagnosis and treatment of adrenal cortical insufficiency. Without going into great detail as to basic physiology, sufficient applied physiology is included to illuminate the clinical discussion. The clinical concepts are similar to those which are current in this country, with the possible exception of the acceptance by the author of certain borderline syndromes as forms of adrenal cortical insufficiency. The references to the literature are ample and international in character. This volume should be of value to internists who have a special interest in disorders of the endocrine glands.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

RHEUMATOID ARTHRITIS

To the Editor:—Please give data on the latest treatment of rheumatoid arthritis following rheumatic fever of young adults

W. C. Terry, M.D., Hamlet, N.C.

ANSWER.—Although there is no reason why rheumatoid arthritis should not follow rheumatic fever in the same person, proved cases of this combination are difficult to find. In most instances when rheumatic fever is believed to precede the development of a progressive joint disease consistent with rheumatoid arthritis, the patient has actually had an atypical acute or subacute first attack of rheumatoid arthritis. Another less likely possibility is that the patient is suffering from an adult type of rheumatic fever, without evidence of carditis and with unusually prolonged articular manifestations. Treatment, of course, depends on the final diagnosis. While this is still uncertain, the patient should be confined to bed, receive a well balanced diet and be given salicylates in as large doses as can be tolerated. The joints should be watched for the development of persistent changes, in which case the diagnosis is presumably rheumatoid arthritis. A review of the current status of therapy in both rheumatic fever and rheumatoid arthritis has recently appeared (Hench, P.S., and others: *Ann. Int. Med.* 28:66-168, 1948.)

BIRTH CONTROL

To the Editor:—I have literature on a so-called "rhythmeter," which is supposed to be accurate in predicting rhythm control of pregnancy and also useful in more accurately predicting births. The American Medical Association is quoted in this material. Are these statements correct? Has this system been tried and how successful has it proved? I have always been skeptical of it and have only advised it for families who are not allowed to use other methods. This article claims that it is better than the conventional methods. Please give information in this matter.

Alvin H. Seibert, M.D., Grosse Pointe Park, Mich.

ANSWER.—The greatest exponents of the rhythm, or Ogino-Knaus, theory in this country are Latz and Reiner (J.A.M.A. 105:1241 [Oct. 19] 1935). They set forth following rules:

1. A written record is made of the dates of the beginnings of menstrual periods covering a period of at least eight months to one year before applying the method. This is necessary to determine the variation between the shortest and the longest cycle. Patients should also be instructed to record disturbing factors that may upset the regularity of menstruation, such as sickness (even colds), mental shock or upset, physical strains and even great changes in climate or altitude. This will enable the physician to make an intelligent interpretation of the data given. Data furnished by memory are of no value.
2. Sexual intercourse during the time of possible conception is prohibited.
3. Regularity in menstruation must prevail. The menstrual cycle may be either long or short, but the variation should not be more than ten days; a longer variation would make the use of the method impracticable. However, according to Latz and Reiner, 90 per cent of women have variations of from two to eight days regardless of whether their cycles are short or long, and therefore they maintain that most women menstruate regularly enough to make use of this method of natural conception control.
4. After these three rules have been satisfied, the woman is told that her fertile period extends from the twelfth to the nineteenth day before her expected menstruation (the expected first day of menstruation being calculated from the longest cycle in the last eight months) plus the days of variation between the longest and the shortest cycle in the last eight months added to the beginning of the fertile period. For example: Suppose a woman has varied between a twenty-six and a thirty day cycle in the last eight months. Then her first seven days, counting from the first day of menstruation, are sterile. The next twelve days (eight days of regular fertility plus the four days of variation) are fertile. The patient is then asked to record conscientiously on a calendar the day of each intercourse as well as the first day of each menstrual period.

This method of birth control should not be used: (1) after labor, miscarriage or abortion until the regularity of the cycle is reestablished (usually in three to six months); about 50 per cent of women menstruate irregularly after childbirth; (2) after febrile or debilitating diseases or severe physical injuries. (3) after severe psychic or emotional upsets, or (4) after any drastic alteration in the ordinary routine of life, such as prolonged travel in a different climate and strenuous exercises. During and after these unusual occurrences, the method should not be used until regular menses have been definitely established.

J. P. Greenhill (*Office Gynecology*, ed. 4, Chicago, Year Book Publishers, 1946, p. 223) says: Unfortunately, the safe period of conception control cannot be applied as universally as its proponents believe. In the first place, only 80 per cent of women, at most, menstruate with any degree of regularity which will permit calculation of a fertile period. Certainly not more than 60 per cent of all women menstruate approximately every twenty-eight days. Second, a large proportion of women at more or less periodic intervals encounter the contraindications enumerated by Latz and Reiner. Thus, most women at various times have full term pregnancies or miscarriages, minor or major illnesses, psychic or emotional upsets or they take trips to other climates. Third, certainly not all, or even the majority of women ovulate on the fifteenth day before every menstrual period. Many women ovulate a few days before or after this date....An objection to the Ogino-Knaus method raised by many couples, particularly recently married ones, is that there is an excessively large number of days each month when coitus cannot be indulged in. In some cases less than half of each month is safe or convenient for coitus.

Latz and Reiner present a useful chart which shows the fertile days each month for women who menstruate from twenty-one to thirty-eight days apart. A number of mechanical devices, of which the "rhythmeter" is one, have been designed to help physicians and patients determine the fertile days in each month, but these devices are not necessary.

MENOPAUSAL ARTHRALGIA

To the Editor:—I have seen 3 women recently, all of whom complain of being awakened at night with severe pain in both hands. The pain is so severe that they are obliged to get up and walk around shaking their hands until they obtain some relief. Sometimes the hands are swollen but the color does not change. Bathing the hands in warm water gives little or no relief. Physical observations are noncontributory. The women are all between the ages of 38 and 45. Is this a manifestation of so-called menopausal arthritis? I would appreciate suggestions as to treatment.

H. V. Temple, M.D., Oak Creek, Colo.

ANSWER.—Exquisite pain in the fingers, occurring especially at night, has been described by Hall (*New England J. Med.* 219:1015-1026, 1938) in patients with articular symptoms following the menopause. The suggestion was made by this author that the pain was due to vascular spasm. Similar pain, however, is not uncommon in the early stages of rheumatoid arthritis. The presence of other symptoms and signs commonly associated with the menopause would add weight to the opinion that menopausal arthralgia was present. A trial of oral or parenteral estrogenic therapy in adequate dosage is indicated, but the final diagnosis will probably depend on further observation.

DIETHYLSTILBESTROL

To the Editor:—A man aged 72 had an enlarged prostate. He took diethylstilbestrol, 5 mg. a day for about twenty days. Then it began to nauseate him a little and he stopped. As a result of the medication the prostatic difficulty improved considerably, but about ten days later he noticed that he had a slight enlargement of both breasts with some soreness and slight pain on palpation. This hyperplasia of the breasts was fibrotic in character—a disk about the size and thickness of a quarter developed underneath each nipple—rather hard, like cartilage, to the touch and sensitive, the nipple especially, with a moderate degree of soreness of the disk underlying the nipple. This condition of the breasts has continued for three months. Will this abnormality clear up, since the diethylstilbestrol therapy has been discontinued? Might it be cancer initiated by the treatment, possibly due to the rather large doses taken? The literature on this drug suggests that it has been given in much larger doses over extended periods without serious after-effects.

C. C. Townsend, M.D., Walnut Ridge, Ark.

ANSWER.—Diethylstilbestrol is indicated only in the presence of carcinoma of the prostate gland. The patient should be observed at intervals while on stilbestrol therapy, because of the many and varied reactions to this medication. Besides the decrease in size of the carcinoma and its metastases, one also notes enlargement of the breasts, salt and fluid retention, dyspepsia, atrophy of the testicles and hypertrophy of the pubic fat pad.

Cancer of the male breasts is not a well established sequela of diethylstilbestrol therapy. However, such a case was reported this year. Refer to the *Journal of Urology* (59: 76 [Jan.] 1948) for the explanation of this situation and an excellent bibliography of diethylstilbestrol therapy for carcinoma of the prostate.

CANCER OF THE BREAST

To the Editor:—In THE JOURNAL, Jan. 31, 1948, page 305, Cornelius P. Rhoads, M.D., makes brief reference to the use of testosterone and diethylstilbestrol for metastatic cancer of the breast. A woman patient, 67, had a carcinoma of the breast removed eighteen months ago. The tumor had invaded the anterior wall of the chest, so that the pectoralis major was adherent to the ribs and intercostal tissues, due to the carcinomatous infiltration. The pathologic diagnosis was carcinoma of the simplex or medullary type with regional metastases. The patient is still apparently well, and no growth of the remaining malignant growth was palpable until recently, when a hard nodule became palpable high in the axilla, which seems to be adherent to a rib. On the anterior chest where widespread pieces of malignant tissue were left signs of recurrence are absent. Should this patient be treated with either testosterone or diethylstiobestrol? She has not had roentgen therapy, and roentgenograms do not indicate metastasis.

ANSWER.—The choice of the sex hormone to be tested therapeutically in inoperable mammary cancer in female patients is dependent on two principal factors: the age of the patient and the site of the metastatic cancer. Female sex hormone is used exclusively in patients several years past the menopause, whereas male sex hormone is used without reference to the age. Female sex hormone is the empiric choice in the presence of nonosseous metastases (lymph node, skin, breast), while male sex hormone is preferred in the presence of osseous metastases.

In the case of the patient in question further clinical studies are indicated. Roentgenograms of the lungs, ribs and other bones should be made to establish the extent of the metastatic involvement. Pelvic examination should be made in order to rule out concomitant pelvic disease which might preclude the use of estrogen.

If the decision is made to try sex hormone, rather than conventional roentgen therapy, then the choice, whether estrogen or androgen, will depend on the relative clinical importance of the metastases in the various sites.

GOLD THERAPY

To the Editor:—A patient has been taking the gold treatment for chronic arthritis for some months and apparently was much helped thereby. But recently he has had a sudden hemorrhage from the throat, repeated twice after he reached the hospital. Is there any record of gold having caused such hemorrhages?

George A. Skinner, M.D., Berkeley, Calif.

ANSWER.—"Sudden hemorrhage from the throat" is not a reported complication of chrysotherapy, although toxic effects on the hemopoietic system resulting from the use of gold salts have produced hemorrhages in the intestines, brain and skin. D. E. McKenna (discussion, *New York State J. Med.* 36: 1530-1531, 1936) has reported febrile epistaxis of severe degree in 2 cases and of mild degree in 6 cases of a total of 26 cases in which toxic reactions to chrysotherapy were manifest. Before assuming that the hemorrhages from the throat in this case were actually related to the chrysotherapy, one must exclude the presence of certain other conditions, such as esophageal varices, varices at the base of the tongue, small localized nasopharyngeal ulcers, hemangiomas and superficially placed arterioles. The results of a thorough examination along these lines, the type of gold preparation, the dosage schedule and the total amount received by the patient must be known before an opinion can be given concerning the cause of the hemorrhage from the throat in this case. Also, estimation of the hemoglobin and bleeding time and counts of the erythrocytes and platelets should be made.

Hemorrhage related to toxic effects of chrysotherapy on the hemopoietic system may result from thrombocytopenic purpura, agranulocytosis or aplastic anemia. The toxic reactions may be mild, serious or fatal. Most commonly encountered is thrombocytopenic purpura, which, when promptly recognized, is usually not a serious complication; however, grave reactions and death have occurred. Other reported deaths have resulted from multiple cerebral hemorrhages, agranulocytosis and aplastic anemia. When toxicity is suspected or confirmed, it is imperative that chrysotherapy be promptly discontinued (either temporarily or permanently), as most reactions are controlled thereby. Although no specific antidote for the toxic reactions from chrysotherapy is known, penicillin is effective in preventing serious secondary infectious processes that might otherwise unfavorably complicate the course of agranulocytosis (Boland, E. W.; Headley, N. E., and Hench, P. S.: The Treatment of Agranulocytosis with Penicillin, *J.A.M.A.* 130: 556-559 [Mar. 2] 1946) or aplastic anemia. Recently 2, 3-dimercaptopropanol (BAL, British anti-lewisite) has been used for treatment of toxic reactions from various heavy metals, including gold (Cohen, A.; Goldman, J., and Dubbs, A. W.: The Treatment of Acute Gold and Arsenic Poisoning; Use of BAL [2, 3-Dimercaptopropanol, British Anti-Lewisite], *J.A.M.A.* 133: 749-752 [Mar. 15] 1947. Ragan, C., and Boots, R. H.: The Treatment of Gold Dermatitides; Use of BAL [2, 3-Dimercaptopropanol], ibid. 133: 752-754 [Mar. 15] 1947. Lockie, L. M.: Norcross, B.M., and George, C.W.: Treatment of Two Reactions Due to Gold; Response of Thrombopenic Purpura and Granulocytopenia to BAL therapy, ibid. 133: 754-755 [Mar. 15] 1947).

Although much information regarding chrysotherapy has been accumulated in recent years, this treatment still involves acceptance of risks which are potentially serious. These risks are justified when rheumatoid arthritis is progressive and unrelieved by adequate trial of safer methods of treatment, when the patient understands and accepts the risk and when the physician has fully acquainted himself with chrysotherapy before accepting responsibility for its use.

COLA AND ASPIRIN

To the Editor:—Several of my patients have informed me that they have experienced a "jag," or sort of intoxication, from drinking "coca-cola" fortified by the addition of acetylsalicylic acid. My first reaction was to doubt the existence of such a physiologic reaction to the combination of these two relatively harmless ingredients, but I was assured that it was a true intoxication. I would like to know if there is such a reaction, and if so, to what is it due and is it harmful?

Frank E. Nagel, M.D., Chicago.

ANSWER.—The only active ingredients in coca-cola are caffeine (approx. 60 mg., 1 grain, in the Northern states and 120 mg., 2 grains, in the Southern states) and phosphoric acid. The combination of acetylsalicylic acid or other coal tar analgesics with caffeine is common in proprietary remedies for the relief of mild types of pain ("empirin," "bromo-seltzer," "stanback" and "B.C."). A portion of the analgesia produced by this combination results because headaches are often due to an irregularity in caffeine intake, which will result in caffeine-withdrawal headache (Dreisbach, R. H., and Pfeiffer, C.: *J. Lab. & Clin. Med.* 28: 1212, 1943). This is typified by the patient who has a headache if he does not obtain his morning cup of coffee. Caffeine alone is specifically analgesic in this type of headache but does not raise the normal pain threshold in the normal subject (Hardy, J. D.; Wolff, H. G., and Goodell, H.: *J. Clin. Investigation* 20:63, 1941).

Changes in mood as a result of acetylsalicylic acid and caffeine are extremely difficult to evaluate. Since experimenters in this field have given relatively enormous doses of these two drugs to normal subjects and have not observed such changes, the reports of the patients in this instance may be due to an unusual sensitivity to the drugs or to the initial presence of an abnormally dull mood precipitated by lack of caffeine in the habituated subject. A third possibility may be that this combination has taken the place of the older "ammonia coke," which consisted of a drop or two of dilute solution of ammonia in a "coca-cola" and was at one time falsely regarded by the laity as highly stimulant. This would place the observation in the category of an overrated fad of the laity.

TRAUMA AND CIRRHOSIS

To the Editor:—An Italian man, aged 56, has unequivocal clinical and laboratory evidence of cirrhosis, his chief complaint being ascites. Shortly preceding the onset of his illness he had a fair degree of trauma over his hepatic area. The patient has led an exemplary life, is not an alcoholic addict, has followed a good diet and has never had any evidence of hepatic disease (e.g., jaundice) previously. Is there any possible relationship between the cirrhosis and the trauma?

Franklin K. Paddock, M.D., Pittsfield, Mass.

ANSWER.—In any large series of patients with cirrhosis, the physician frequently encounters some who have had no exposure to alcohol, hepatotoxic agents or dietary errors and who do not give a history of infectious jaundice. In such patients the basic cause of the process remains obscure. External trauma to the abdomen in the vicinity of the liver is not believed to be of any etiologic importance in the production of cirrhosis, there being no reported instances in which the disease followed injury alone. Lacerations of the liver, subcapsular hematomas and the like have been reported to follow trauma, but they usually leave no important residues. An exception must be made in the rare cases in which deep lacerations seriously interfere with the blood supply and produce massive areas of necrosis. In such cases the termination usually is fatal within a matter of a few days.

THUMB SUCKING

To the Editor:—A girl aged 8 years has been sucking her thumb since infancy. Her dentist stated that it was responsible for malocclusion. In order to correct this he desires that measures be taken to stop the habit. What trauma to the personality may result from forceful or psychiatric measures to arrest this habit? Is there any dental, medical or psychiatric contraindication to allowing this habit to reach a natural termination?

M.D., Georgia.

ANSWER.—Many dentists and physicians believe that in persistent thumb sucking there may occur malocclusion characterized by a bending down of the anterior mandible, the lower incisors being bent backward and the upper incisors pushed forward. Of course, it is well known that many children have malocclusion without ever having practiced thumb sucking and, conversely, that in not a few persistent thumb suckers malocclusion never develops. One cannot, on the basis of present knowledge, flatly contradict the assumption that malocclusion is caused by this habit, though, on the other hand, the proof that it causes deformities of jaws and teeth is not altogether convincing.

The thumb-sucking habit is acquired during the early months of life and most often disappears in preschool age. If the habit persists after the twelfth month, it is, to say the least, undesirable. If it continues after the sixth or seventh year, psychiatrists say that it is a manifestation of a general emotional immaturity. An attempt should certainly be made to help this child of 8 years to correct this habit. Harsh methods should not be employed; intelligent kindly treatment should be tried. While most infantile thumb suckers desist from the habit early in life, it may be said confidently that the older the child, the more fixed the habit and the more difficult it is to cure. In the case of a patient 8 years of age it is late to expect a natural or spontaneous termination; as has already been stated, the child needs help.

PREVENTATIVE

To the Editor:—We have had a discussion on the use of the word "preventative." We are familiar with the word "preventive," but is there such a word as "preventative?"

ANSWER.—We prefer the word "preventive" as applied in the term "preventive medicine" and for all other purposes. The Oxford Dictionary indicates under the word "preventative" that it is an alternate word which came into use about 1654, whereas preventive came into use in 1639. According to Fowler's "Modern English Usage," which is considered to be the greatest authority, the short term "preventive" is preferred for all purposes. According to Opdycke, whose book "Don't Say It" is a well recognized authority, preventive "is both adjective and noun, meaning precautionary or stopping or tending to prevent." the word preventative, he says, is "a corrupt but still widely used term."

ANTIGENIC POLISHES

To the Editor:—Is there a nonantigenic furniture polish? Which brands are recommended?

Clifford H. Kalb, M.D., Milwaukee.

ANSWER.—Polishes designed for use on wooden furniture contain soap or other alkalies, oils and waxes. Polishes for metals contain abrasives and solvents also. All these materials are capable of producing dermatitis in susceptible persons and, unfortunately, there is still no satisfactory substitute for these potential cutaneous irritants.

USE OF STAINLESS STEEL IN COOKING

To the Editor:—Kindly state the advantages and disadvantages of cooking with stainless steel pans, waterless.

Louis F. Waldmann, M.D., Waukegan, Ill.

ANSWER.—Stainless steel represents no fixed alloy composition and may represent 18 per cent chromium and 8 per cent nickel, the remainder being steel. However, there may be a minor constituency of silicon, columbium, manganese and/or beryllium. In any event, these metals provide no exposure for the user. Food acids attack stainless steel little and mineral acid scarcely more. Phosphoric acid is more active in attacking such utensils. Stainless steel is more durable than aluminum but, in truth, is not permanently stainless. Its bright surfaces reflect heat, which suggests that the bottom should be allowed to become blackened or should be deliberately blackened. Stainless steel is a poor conductor of heat, so that localized points of heat might interfere with cooking. To overcome this some manufacturers introduce a second bottom of copper as a heat conductor, but obviously this adds to the cost. Cast iron utensils are more easily attacked by chemicals within foods and may provide enough dissolved metal to impart unwanted taste. Notwithstanding, many old-timers continually regard the the passing of the cast iron cooking pot as a major gustatory defeat.

"Waterless" cooking is a catch phrase to emphasize "a little water." Some vegetables contain enough water to require none in addition; the majority require a fraction of an inch of water. Obviously, an egg boiled in a gallon of water requires more fuel than the same egg boiled in an ounce of water Equally obvious, the loss of vitamins and minerals increases in copious quantities of cooking water. For example, cabbage cooked in much water retained 54 per cent of its ascorbic acid. The same cabbage cooked in a minimum of water retained 84 per cent of its ascorbic acid. However, for snap beans and potatoes no differences are measurable from the two methods of cooking. Ordinarily cooks prefer little water in order to conserve the shape of certain vegetables, such as cauliflower. Further, it is obvious that more time in addition to more fuel is required to heat up a large amount of cooking water. All considered, the waterless cooking appears to have substantial merit as a vitamin-mineral saver, a fuel saver, a time saver and an appearance saver.

HYPOTHYROIDISM

To the Editor:—Please let me know the present status of use of a thyroid in a mildly overweight man aged 41 (10 to 15 pounds, 4.5 to 6.8 Kg.) with a basal metabolic rate of minus 25 per cent but no true hypothyroid symptoms. There is also a moderately elevated blood cholesterol level. Should a low cholesterol diet be prescribed in the hope of minimizing early arteriosclerosis? (The patient's father died at 54 years of age of coronary thrombosis.) If a low cholesterol diet is recommended, what foods should be eliminated?

M.D., Connecticut.

ANSWER.—The use of thyroid extract cannot be recommended for the treatment of obesity in which hypothyroidism is not the etiologic agent. However, the low basal metabolic rate and the elevated blood cholesterol level suggest that, as sometimes happens, this patient is suffering from hypothyroidism without obvious clinical symptoms. Determination of the bound protein iodine of the blood might be helpful as an additional objective criterion. If the last mentioned is not available, thyroid extract may be administered as a therapeutic test. If the basal metabolic rate reacts sensitively to the administered thyroid and if the blood cholesterol level decreases to the normal range, it may be concluded that the patient has hypothyroidism and that the thyroid extract should be continued on a treatment basis. But if the basal metabolic rate shows little or only temporary rise with small or moderate doses of thyroid extract (1 to 2 grains [0.06 to 0.13 Gm.] per day) and if the cholesterol level doses not fall, the thyroid should be discontinued.

In the absence of a specific endocrine disturbance, the only sound treatment for obesity is the restriction of the total caloric intake. This must be continued until the proper caloric intake becomes a well established habit with the patient. As regards the relationship of the blood cholesterol level and the development of arteriosclerosis, evidence to date does not reveal any clear connection. Hence, despite some suggestions that such a connection exists, it is hardly warranted to impose the inconveniences of a low cholesterol diet on patients until more definitive evidence of a casual relationship is available.

SESAME OIL

To the Editor:—Please give information on the fate of the sesame oil in sesame oil preparations when injected intramuscularly and subcutaneously. Is there any hazard in the long-continued use of such preparations, especially penicillin in sesame oil which would be given once daily over a period of from one to three or four months?

ANSWER—Sesame oil preparations injected intramuscularly cause minor local reaction and are broken down readily into minute oil cysts by the action of the muscle. When they are given subcutaneously, diffusion occurs through the subcutaneous tissues, and because of this localization considerable inflammatory reaction with local pain occurs. When administration is intramuscular, the minute oil cysts which are formed usually disappear in from ten days to several weeks. The action of the muscle tends to collapse these minute cysts, so that biopsy material, when obtained at approximately a two- to three-week interval after injection, rarely shows any residue. Injections of sesame oil could be given daily for protracted periods of time if given intramuscularly and at different sites. The minor hazards which might occur are sensitivity to the penicillin and rarely to the oil. It is advisable to question patients as to penicillin or sesame oil sensitivity prior to injection.

BIRTHMARKS

To the Editor:—A patient has a port wine birthmark occupying a large part of the left side of his face and neck. I believe that at the annual meeting in Atlantic City, N. J., last year a paper was read which suggested use of a tattoo procedure. Could you give me any information regarding this problem.

J. C. Lee, M.D., Indiana, Pa.

ANSWER.—Usually port wine marks are not treated because the results are less than satisfactory and and they can be hidden successfully by covering with a cosmetic preparation such as "covermark." The lesions are often irregular in shape and color, so that treatment with the usual destructive measures, such as radiation or solid carbon dioxide, leaves a mottled appearance which still constitutes a cosmetic problem. Grenz rays are said to produce some improvement, particularly when used in infancy, but experience with Grenz rays has not been extensive.

Recently H. Conway and J. P. Doktor (*Surg., Gynec. & Obstet.* 84:866 [April 15] 1947) reported on a method of treatment by tattoo wherein permanent pigments were tattooed into the nevus. This article described the technic and illustrated the results of the treatment with photographs.